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IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

STATE OF CALIFORNIA, by and through Attorney General Xavier Becerra; COUNTY OF LOS ANGELES; CITY OF LOS ANGELES; CITY OF FREMONT; CITY OF LONG BEACH; CITY OF OAKLAND; CITY OF STOCKTON,

Plaintiff,

v.

WILBUR L. ROSS, JR., in his official capacity as Secretary of the U.S. Department of Commerce; U.S. DEPARTMENT OF COMMERCE; RON JARMIN, in his official capacity as Acting Director of the U.S. Census Bureau; U.S. CENSUS BUREAU; DOES 1-100,

Defendants.

3:18-cv-01865

NOTICE OF FILING OF UPDATED TRIAL DECLARATION OF ANDREW REAMER, PH.D.

Dept:	3
Judge:	The Honorable Richard G. Seeborg
Trial Date:	January 7, 2019
Action Filed:	March 26, 2018

Plaintiffs hereby submit the trial declaration of expert witness Andrew Reamer, Ph.D., originally filed on December 28, 2018 (ECF No. 129), and as modified by the Court's Order Re: Defendants' Motion in Limine and Objections to Plaintiffs Trial Declarations dated January 11, 2019 (ECF No. 168). A copy of the updated declaration is attached hereto as **Exhibit 1**.

Dated: January 13, 2019

Respectfully submitted,

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FILER'S ATTESTATION

Pursuant to Civil Local Rule 5-1(i)(3), regarding signatures, I hereby attest that concurrence in the filing of this document has been obtained from all signatories above.

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EXHIBIT 1

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IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

STATE OF CALIFORNIA by and through ATTORNEY GENERAL XAVIER BECERRA; COUNTY OF LOS ANGELES; CITY OF LOS ANGELES; CITY OF FREMONT; CITY OF LONG BEACH; CITY OF OAKLAND; CITY OF STOCKTON, Plaintiffs, **v.** **WILBUR L. ROSS, JR., in his official capacity as Secretary of the U.S. Department of Commerce; U.S. DEPARTMENT OF COMMERCE; RON JARMIN, in his official capacity as Acting Director of the U.S. Census Bureau; U.S. CENSUS BUREAU; DOES 1-100,** Defendants.	3:18-cv-01865 **TRIAL DECLARATION OF ANDREW REAMER, Ph.D.** Dept: 3 Judge: The Honorable Richard G. Seeborg Trial Date: January 7, 2019 Action Filed: March 26, 2018

CITY OF SAN JOSE, a municipal corporation; and BLACK ALLIANCE FOR JUST IMMIGRATION, a California Non-Profit Corporation,

Plaintiffs,

v.

WILBUR L. ROSS, JR., in his official capacity as Secretary of the U.S. Department of Commerce; U.S. DEPARTMENT OF COMMERCE; RON JARMIN, in his official capacity as Acting Director of the U.S. Census Bureau; U.S. CENSUS BUREAU,

Defendants.

Case No. 3:18-cv-02279

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I. QUALIFICATIONS

1. I was retained in this litigation to provide analyses of the impacts of the inclusion of a question on citizenship status on the 2020 Census questionnaire on the distribution of particular types of federal domestic assistance funds to certain states.

2. I am a research professor in the George Washington Institute of Public Policy (GWIPP) at The George Washington University in Washington, D.C. My research aims to support U.S. national economic development and competitiveness. A substantial component of my work concerns the roles and functioning of the federal statistical system, including the U. S. decennial census and the datasets produced using its outputs.

3. In 2011, I began my research at GWIPP after six years at the Brookings Institution's Metropolitan Policy Program and 20 years as a consultant in U.S. regional economic development and public policy. As a fellow at Brookings, I was responsible for encouraging a strong, well-functioning federal statistical system that met the data needs of public and private stakeholders. To that end, I was instrumental in ensuring the commencement and continued existence of the American Community Survey (ACS).

4. Throughout my career as an economic development consultant, I prepared strategic analyses and plans that relied heavily on federal demographic and economic statistics. I currently conduct the research project "Counting for Dollars 2020: The Role of the Decennial Census in the Geographic Distribution of Federal Funds." Project reports already published include Report #1: Initial Analysis: 16 Large Census-Guided Financial Assistance Programs (August 2017), which has been marked as Exhibit PTX-774; Report #2: Estimating Fiscal Costs of a Census Undercount to States (March 2018), which has been marked as Exhibit PTX-775; Report #3: Census-Guided Financial Assistance to Rural America (December 2018); Report #4: Census-Derived Datasets Used to Distribute Federal Funds (December 2018). In addition, the following reports will be published in 2019: Report #5: 55 Large Census-Guided Federal Spending Programs; and Report #6: A Comprehensive List of Federal Programs that Geographically Allocate Spending Based on Decennial Census Data.

5. While at Brookings and prior to the 2010 Census, I published a Counting for Dollars study that identified census-guided federal financial assistance programs and calculated fiscal year (FY) 2008 funding flows by program to states, metro areas, and counties, although with a substantially smaller level of effort than my current project. A copy of this study has been marked as PTX-776.

6. I received a Ph.D. in Economic Development and Public Policy and a Master of City Planning from the Massachusetts Institute of Technology and a Bachelor of Science in Economics from the Wharton School, University of Pennsylvania.

7. I am a member of several federal advisory committees—the U.S. Bureau of Labor Statistics (BLS) Data Users Advisory Committee (of which I am former chair), the Bureau of Economic Analysis (BEA) Advisory Committee, and the Workforce Information Advisory Council, which is part of the Department of Labor. I recently completed a two-year term as a member of the Commerce Department's National Advisory Council on Innovation and Entrepreneurship. I am a member of the Statistics Committee of the National Association for Business Economics (NABE), which meets three times yearly with the directors of the U.S. Census Bureau, BEA, and BLS. I provide staff assistance to the Economic Statistics Committee of the American Economic Association, the nation's professional association of economists. I am a member and former president and board member of the Association of Public Data Users, as well as a member of the Industry Studies Association, for which I manage the Innovation and Entrepreneurship track at its annual conference. I have attached a copy of my expert report, which has been marked as Exhibit PTX-772, and my curriculum vitae, which has been marked as Exhibit PTX-773 as **Exhibits A** and **B**, respectively, to this declaration.

8. Based on my experience, training, knowledge, and education, I believe I am well-qualified to offer expert opinions on how decennial census results affect the geographic distribution of funding by several types of federal domestic financial assistance programs.

9. Attached as **Exhibit C** to this declaration is a list of documents and publications on which I relied in forming my expert opinions. These publications and documents listed in Exhibit

C (including, but not limited to, those sources cited in this declaration) are of the kind that experts in this field would reasonably rely on when forming expert opinions of this nature.

II. SUMMARY OF OPINIONS

10. Federal domestic financial assistance—in the form of direct payments to individuals, grants, loans, and guaranteed and insured loans—funds a substantial portion of the American economy and its system of federalism. A significant portion of federal domestic financial assistance is distributed on the basis of statistics derived from the decennial census. I am aware of at least 320 federal domestic assistance programs that used census-derived data to distribute about $900 billion in FY2016. The two most important uses of census-derived data to guide federal assistance program funds distribution are for determining program eligibility and for geographically allocating funding through formulas, the latter of which is the subject of my testimony here.

11. From this list of 320 programs, I have identified 24 large federal financial assistance programs with geographic allocation formulas that rely in whole or part on census-derived data. Attached as **Exhibit D** to this declaration is a chart I created listing out these programs along with some relevant details, which has been marked as Exhibit PTX-245. Of these programs, six use the Federal Medical Assistance Percentage (FMAP) reimbursement formula, and the remaining 18 rely in whole or part on state share of a U.S. population total ("state-share programs").

12. Geographic allocation formulas are particularly sensitive to inaccuracies in census-derived data. The census-derived datasets that are particularly important for determining the geographic allocation of funds by formula are the Census Bureau's Population Estimates and American Community Survey (ACS). There is a strong, direct relationship between the accuracy of the decennial census and the reliability of both the Population Estimates and the ACS such that decennial census data is an essential determinant of the accuracy and reliability of both.

13. A differential undercount among diverse population groups in the 2020 Census would affect each succeeding year's Population Estimates for the following decade because the 2020 count serves as the base of these Population Estimates. Moreover, such a 2020 Census undercount would negatively affect each year's ACS data. As the ACS methodology handbook makes clear,

the ACS relies on the decennial census for its sampling frame and sample design, its approaches to imputation, the statistical weights given to individual responses, and the measurement of variance. As a result, the accuracy of ACS estimates of the percentage distribution of various population characteristics at every level of geography is a function of the reliability of the decennial census. Further, as Population Estimates provide the controls by which ACS percentages are transformed into population counts by characteristics, again at every level of geography, a decennial census undercount would lead to inaccurate ACS population estimates. Also, as the ACS informs the net international migration estimate for the Population Estimates, an undercount would result in an undercount of that component of population change.

14. Using three of these 24 programs as examples, I have performed calculations using a series of two assumptions of different rates of undercounts of noncitizens due to the citizenship question and applied to 2020 population projections by state. It is my understanding that each of these two scenarios are in comparison to a baseline case in which the citizenship question has no differential effect on these groups. Each of the undercount scenarios would produce a differential undercount—that is, the extent of the undercount (as measured by percentage of the population missed) would vary greatly across states, reflecting the relative presence of noncitizens in the respective state populations.

15. I understand that these projections were prepared by Dr. Bernard Fraga, and I express no opinion about these undercount assumptions or population projections provided to me. Rather, I use these projections to demonstrate the nature and comparative magnitude of impacts of funding loss for one year to particular states if these undercount scenarios are realized in the 2020 Census. Each of my illustrations assumes that Dr. Fraga's scenarios were realized in the 2010 Census and, on that basis, estimates the impacts on program funding by state in FY2016.

16. Based on this analysis and my understanding of relevant funding formulas and census-derived datasets, it is my opinion, held to a strong degree of professional certainty, that if either of the undercount scenarios provided to me is realized in the 2020 Census, this would result in a shift in relative state population shares and a comparable shift in funding allocations. Under

this scenarios, states with an undercount rate greater than the U.S. undercount rate would lose share and states with an undercount rate greater than the U.S. figure would gain share.

17. With respect to the 18 state-share programs I have identified as census-sensitive, and as will be demonstrated using three example programs later in my testimony, those states with an undercount rate greater than that for the U.S. as whole would lose share, and thus funding, relative to their actual population. Specifically, because several states—including California, New York, Texas, Florida, New Jersey, Nevada, and Hawaii—have high relative percentages of non-citizens, these states would lose population share while many other states would gain share.

18. In sum, it is my opinion, held to a strong degree of professional certainty, that for programs with allocation formulas based on a state's population relative to the nation, and under the assumption that allocation formulas and funding levels remain similar, a differential decennial census undercount of non-citizens would lead to measurable fiscal losses for those states with percentages of non-citizens above the nationwide average.

19. Moreover, if in the future current allocation formulas and funding levels change, as long as the allocation formulas retain a degree of state-share-based calculation, a differential decennial undercount would cause the same states previously identified to lose money from the same programs, although in different amounts.

20. Similarly, ***a change in the degree of differential undercount would only affect the magnitude of the losses to the states identified above, not the existence of such losses***. Even a 0.5 percent differential undercount, for example, would cause losses in state-share programs to California, New York, Texas, Florida, New Jersey, Nevada, and Hawaii.

III. FEDERAL DOMESTIC FINANCIAL ASSISTANCE PROGRAMS GUIDED BY DATA DERIVED FROM THE DECENNIAL CENSUS

21. Domestic assistance programs provide financial assistance and non-financial assistance to non-federal entities within the U.S.—such as individuals, state and local governments, companies and nonprofits—in order to fulfill a public purpose.

22. In FY2017, the federal government provided approximately $4.77 trillion in direct domestic financial assistance programs, an amount equal to 24.9 percent of gross domestic

product. Of that total, approximately $2.36 trillion were direct payments to individuals, and $674.7 billion were grants, primarily to state and local governments.

23. Congress recognizes that the appropriate, equitable distribution of certain forms of financial assistance should be guided by demographic and economic data at various levels of geography. As a consequence, it has directed that a substantial portion of federal financial assistance to state and local governments, households, businesses, and nonprofit organizations be guided by statistics derived from the decennial census.

24. Since 1790, Congress has used the data from the decennial census to guide the design and implementation of public policies and programs. However, as the decennial census is carried out once a decade and collects data on a small number of demographic characteristics, Congress also recognizes that the decennial numbers, on their own, are inadequate to guide the fair, equitable distribution of federal financial assistance. As a result, Congress has authorized a series of more current and more broadly descriptive datasets derived from the decennial census. I refer to these as "census-derived datasets."

25. I have identified 32 census-derived datasets used by the federal government to geographically distribute financial assistance[1] as shown in **Exhibit E** to this declaration, a schematic I created to demonstrate the relationship of these datasets, and which has been marked as Exhibit PTX-246. Six datasets are considered foundational (*i.e.*, they are derived directly on census data, in whole or in part), with the remaining 26 datasets extensions of these.

26. Only one foundational dataset, the Census Bureau's Urban-Rural Classification of every census tract based on decennial census population density, relies solely on decennial numbers. This classification serves as the foundation for all other federal geographic classifications used to distribute federal financial assistance.

27. Two other foundational datasets are "augmented" in that they annually update variables collected in the decennial census. More specifically, the Census Bureau constructs

[1] Since I submitted my expert report in this case, I have identified an additional 20 census-derived datasets, for a total of 52 (eight foundational and 44 extensions). I published these findings on December 21, 2018 in "Census-derived Datasets Used to Distribute Federal Funds," available at https://gwipp.gwu.edu/sites/g/files/zaxdzs2181/f/downloads/Counting%20for%20Dollars%20%234%20Census-derived%20Datasets.pdf.

annual Population Estimates and Housing Estimates by augmenting decennial population and housing numbers with more recent data, primarily from vital statistics and tax records. For example, the Census Bureau annually updates Population Estimates by taking the previous year's numbers (starting with the decennial year) and adding births, subtracting deaths, and estimating net domestic and international migration.

28. The Population Estimates databases are frequently used directly to determine funds distribution according to each state's share of the most recent U.S. population total. They also enable the creation of economic indicators that allow geographic areas to be compared regardless of size. A good example is state Per Capita Income (PCI), which is determined by dividing state Personal Income by state population (from Population Estimates).

29. Through census-derived household surveys, three foundational datasets collect data on multiple socioeconomic variables such as race, age, poverty, occupation, and housing costs. More specifically, the Census Bureau relies on the decennial census to design and implement the American Community Survey (ACS), the Current Population Survey (CPS), and the Consumer Expenditure Survey (CEX) in five ways:

a. Sampling frame: The Census Bureau's Master Address File (MAF), the underpinning of the decennial census operation, provides the frame from which a survey sample is drawn;

b. Sample design: The decennial census delineates the primary sampling units from which samples are to be drawn and the sampling rates by which they are drawn, as well as guiding sample stratification, that is, the size of subsamples by characteristics such as race and household composition;

c. Imputation: Nonresponses to individual questions are filled in by imputing, or "borrowing" answers from other households with similar characteristics;

d. Weighting: In preparing survey estimates, the weight of each household's response is determined in relation to the estimated overall number of households and the estimated number of residents of similar age, sex, race, and Hispanic

origin, as derived from the decennial census through annual population and housing estimates; and

e. Variance: To understand the reliability of any survey result, the survey sponsors need to produce estimates of variance, or sampling error, which also is based annual population and housing estimates.

30. The six foundational datasets enable the creation of 26 other census-derived datasets, in three categories:

a. Geographical classifications (seven datasets): The designation of particular sets of geographic units on the basis of some combination of population density (e.g., urban/rural), population size, and commuting patterns. Each of the seven geographic classifications in the extension group use the Urban-Rural Classification and one or more of the multivariate datasets;

b. Standard economic indicators (five datasets): Widely-recognized measures of economic conditions such as inflation, personal income, unemployment rate, and poverty rate that can be used to guide a multitude of assistance programs; and

c. Program-specific indicators (14 datasets): Measures of specific economic conditions created to administer a particular financial assistance program, for example, Section 8 housing vouchers and Title I grants to local education agencies.

IV. ANALYSIS OF IMPACT OF DIFFERENTIAL UNDERCOUNT ON FEDERAL ASSISTANCE TO STATES

31. Most census-guided financial assistance programs use census-derived datasets to differentiate among geographic areas and then, through mechanisms such as eligibility and allocation formulas, distribute funds based on those differentiations.

32. Across the breadth of census-guided programs, geographic differences in the accuracy of the decennial census will lead to distortions in the distribution of financial assistance. That said, the sensitivity of funds distribution to census mismeasurement is by far the greatest for programs with geographic allocation formulas that rely on census-derived data. Allocation

formulas reflect a continuum of possible outcomes—place on that continuum is determined by specific statistics, sometimes calculated to the one-hundredth or one-thousandth of a percent point. Even modest geographic differences in census accuracy can lead to changes in funds distribution.

33. In this section, I demonstrate the nature of the fiscal impacts of the inclusion of a citizenship question on the 2020 Census on the distribution of federal domestic assistance. I do so by illustrating the effects that different scenarios of undercounts would have on the distribution to states of funds from three programs with relatively straightforward census-derived allocation formulas—Supplemental Nutrition Program for Women, Infants, and Children (WIC), Social Services Block Grants (SSBG), and Title I Grants to Local Education Agencies.

34. As I noted before, I have analyzed three such programs with such a purpose as examples, but my opinion that any differential undercount among non-citizens will lead to a loss of funding for state-share programs in certain states—California, New York, Texas, Florida, New Jersey, Nevada, and Hawaii—should hold true for any of the other fifteen state-share programs identified on Exhibit D as well.

A. Methodology

35. My analysis relies on population estimates provided to the plaintiffs by Dr. Fraga regarding the number of residents missed in each state due to the inclusion of a citizenship question on the 2020 Census questionnaire. These estimates include a 2020 baseline population projection that assumes no citizenship question, and an estimate of percent of population undercount in each of two scenarios that assume the citizenship question is included.

36. These scenarios are: (1) 5.8 percent of households with at least one non-citizen are not counted; and (2) 5.8 percent of households with at least one non-citizen are not counted initially, but 86.63 percent of these households are ultimately counted successfully through non-response follow-up. I understand the basis for each of these two scenarios is described in Dr. Fraga's testimony.

37. In each of my three program analyses, the baseline case is the latest available data on funding by state, which is from FY2016. I then calculate the impact on each state of each of the

undercount scenarios as if they occurred in 2010, as actual appropriations are not known for years subsequent to the 2020 Census. Each of the three programs analyzed rely on state share of a U.S. population total (for WIC, infants and children ages zero to four at or below 185 percent of poverty; for SSBG, total population; and for Title I, children ages five to 17 in poverty). For WIC, SSBG, and Title I, I assumed that each of Dr. Fraga's scenarios affected each population age group similarly, without revision.

38. The estimation methodology for WIC involves sequentially calculating: (1) each state's percent share of population under the baseline 2020 scenario and the two undercount scenarios; (2) each state's ratio of revised share to baseline share under each scenario; (3) each state's percent share of children ages zero to four at or below 185 percent of poverty per FY2016 guidelines from the U.S. Department of Agriculture Food and Nutrition Services (FNS); (4) each state's revised percent share of children ages zero to four at or below 185 percent of poverty under each scenario (by multiplying actual share by ratio of revised populations share to baseline populations share); (5) each state's ratio of revised share of children ages zero to four at or below 185 percent of poverty to baseline share under each scenario; (6) each state's percent share of actual FY2016 grant spending; (7) each state's percent share of FY2016 grant spending under each scenario (by multiplying actual share by the ratio of revised share of children ages zero to four at or below under 185 percent of poverty in FY2016 to actual share); (8) each state's grant under each scenario (by multiplying the revised share by the actual total FY2016 spending); and (9) the difference between the actual and revised state grant under each scenario.

39. The estimation methodology for SSBG involves sequentially calculating: (1) each state's percent share of population under the baseline 2020 scenario and the two undercount scenarios; (2) each state's ratio of revised share to baseline share under each scenario; (3) each state's percent share of actual FY2016 grant spending; (4) each state's percent share of FY2016 grant spending under each scenario (by multiplying actual share by the ratio of revised population share to baseline population share); (5) each state's grant under each scenario (by multiplying the revised share by the actual total FY2016 spending); and (6) the difference between the actual and revised state grant under each scenario.

40. The estimation methodology for Title I grants involves sequentially calculating: (1) each state's percent share of population under the baseline 2020 scenario and the two undercount scenarios; (2) each state's ratio of revised share to baseline share under each scenario; (3) each state's percent share of children ages five to 17 in poverty in 2014 (the most recent year before the start of FY2016); (4) each state's revised percent share of children ages five to 17 in poverty under each scenario (by multiplying actual share by the ratio of revised population share to baseline population share); (5) each state's ratio of revised share of children ages five to 17 in poverty to baseline share under each scenario; (6) each state's percent share of actual FY2016 grant spending; (7) each state's percent share of FY2016 grant spending under each scenario (by multiplying actual share by the ration of revised share of children ages five to 17 in poverty in FY2016 to actual share); (8) each state's grant under each scenario (by multiplying the revised share by the actual total FY2016 spending); and (9) the difference between the actual and revised state grant under each scenario.

41. I created the chart attached as **Exhibit F** to this declaration and marked as Exhibit PTX-838 as follows: (1) I was provided the names of cities to use for the comparison by counsel for the City of San José and the Los Angeles Unified School District; (2) I used the American FactFinder, a data webtool hosted by the U.S. Census Bureau, to design and download customized spreadsheets showing the total population, the total number of U.S. citizen and non-citizen residents, and the total number of non-white Hispanic residents for each city; (3) for comparison purposes, I also included in the spreadsheet design and download the total number of residents, the total number of U.S. citizen and non-citizen residents, and the total number of non-white Hispanic residents for the State of California and the United States, (4) for each geographic area, I calculated the percentage of all residents who were U.S. citizens, non-citizens, and non-White Hispanics, and (5) for the group of seven California cities and then for the group of ten cities outside of California, I sorted the rows in terms of rank order from the highest percentage to the lowest percentage of non-citizen residents.

42. The data from the 2017 one-year ACS therefore show that the city of City of San José and the City of Los Angeles each has a higher percentage of non-citizen residents (17.2 percent

and 19.4 percent, respectively) than the United States as a whole (6.9 percent) and the state of California as a whole (13.0 percent).

B. State-Share Programs

1. Supplemental Nutrition Program for Women, Infants and Children (WIC)

43. The objective of WIC is to provide low-income pregnant, breastfeeding, and postpartum women, infants, and children to age five who have been determined to be at nutritional risk, supplemental nutritious foods, nutrition education, and referrals to health and social services at no cost. "Low-income" is defined as at or below 185 percent of the U.S. Poverty Income Guidelines. State agencies have the option to limit WIC eligibility to U.S. citizens, nationals, and qualified aliens (as defined in the Immigration and Nationality Laws), although I am not aware of any that currently do so. Moreover, even if a state chose to limit WIC eligibility, that state would lose the same proportion of funding, making such a decision irrelevant to my opinions.

44. In 2016, 7.7 million people participated in WIC each month, on average—1.8 million women, 1.8 million infants, and 4.0 million children under five. From FY2015 to FY2018, funding for WIC ranged between approximately $6.5 and $6.73 billion.

45. WIC provides funds to each state, which then delivers funds to local agencies. A local agency is eligible to apply to the state agency to deliver locally the services of the WIC Program, provided that: (1) it serves a population of low-income women, infants, and children at nutritional risk; and (2) it is a public or private nonprofit health or human service agency.

46. Two types of WIC grants are provided to each state. The first is for Nutrition Services and Administration (NSA) costs, to cover the costs of running the program and providing assistance services. The second is Supplemental Food. The formula for NSA grants is determined by a per participant formula, adjusted for inflation.

47. Once NSA grants are made, the remaining funds are allocated as Supplement Food grants. They are apportioned by each state's share of the nationwide number of infants and children ages zero to four who are at or below 185 percent of poverty, which is considered the

"fair share target funding level," as defined at 7 CFR 246.16 (c)(3)(1)(a) and 7 CFR 246.7(c)(3). FNS regulations indicate that, to the extent funds are available, each state is to receive at least its prior year grant allocation; if funds continue to be available, each state's grant is adjusted for inflation in food costs; and if funds continue to be available, each state receives funds up to its fair share target funding level.

48. In the fall of each year, FNS publishes a memo of "State-Level Estimates of Infants and Children [Ages 1-4] At or Below 185 Percent of Poverty" based on American Community Survey data from the calendar year two years prior. The ACS in turn is reliant on the decennial census and the Population Estimates databases, as described earlier. FNS uses the census-derived Thrifty Food Plan to determine food cost inflation. That inflation is based on the Consumer Price Index (CPI) for specific food items. The food component of the CPI in turn is based on the Consumer Expenditure Survey, which is also dependent on decennial census results.

49. I have included below a table I created that reflects the states that would have been at risk of losing WIC Supplemental Food grant funding in FY2016 under the two citizenship question-induced undercount scenarios. Specifically, California, Texas, New York, New Jersey, Florida, Nevada, Arizona, and Hawaii would lose funds under both scenarios.

50. It is my opinion that if either of the undercount scenarios are realized in the 2020 Census and if current program allocation formulas and funding levels remain similar over time, such an undercount would cause many of these same states to lose money from this program in the 2020s at approximately the same order of magnitude as the losses set forth in the table below.

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Change in Fair Allocation of WIC Supplemental Food Grants due to Census Undercount, by State, FY2016 -- Ranked

	FY2016 Grant	5.8% UC non-citizens	5.8% UC non-citizens + NRFU
California	$ 794,007,601	$ (6,411,831)	$ (850,759)
Texas	$ 343,031,514	$ (1,348,106)	$ (178,875)
New York	$ 355,447,937	$ (1,035,875)	$ (137,446)
Florida	$ 262,440,234	$ (295,665)	$ (39,231)
New Jersey	$ 110,294,193	$ (266,955)	$ (35,421)
Nevada	$ 34,626,614	$ (150,348)	$ (19,949)
Arizona	$ 103,737,067	$ (90,639)	$ (12,027)
Hawaii	$ 20,646,627	$ (32,187)	$ (4,271)

2. Social Services Block Grants

51. SSBG are grants provided to each state that the state may use to provide services directed toward one of the following five goals specified in the law: (1) to prevent, reduce, or eliminate dependency; (2) to achieve or maintain self-sufficiency; (3) to prevent neglect, abuse, or exploitation of children and adults; (4) to prevent or reduce inappropriate institutional care; and (5) to secure admission or referral for institutional care when other forms of care are not appropriate. While each jurisdiction determines the services that it will provide, the Department of Health and Human Services has indicated that the most frequent service categories supported include child care, child welfare, disability services, case management services, and adult protective services.

52. In FY2014, about 30 million people received services supported at least partially by SSBG funds. In FY2017, $1.574 billion in SSBG funds were distributed to the 50 states plus the District of Columbia. In FY2018, the amount was $1.579 billion.

53. Funds are allocated based on each state's share of total population for the 50 states and the District of Columbia, as determined by the Secretary of Health and Human Services on the basis of the most recent data available from the Department of Commerce. Specifically,

Population Estimates are used to determine each state's allocation of SSBG funds. The calculation of Populations Estimates is based on the decennial census and adjusted each year in part basis on international migration as calculated by the American Community Survey. The ACS in turn is reliant on the decennial census and Population Estimates as described earlier.

54. I have included below as a table I created that reflects the states that would have been at risk of losing Social Services Block Grants funding in FY2016 under the two citizenship question-induced undercount scenarios. Specifically, California, Texas, New York, Florida, New Jersey, Nevada, Arizona, Hawaii, Washington, Maryland, Illinois, and Massachusetts would lose funds under both scenarios.

55. It is my opinion that if either of the undercount scenarios are realized in the 2020 Census and if current program allocation formulas and funding levels remain similar over time, such an undercount would cause many of these same states to lose money from this program in the 2020s at approximately the same order of magnitude as the losses set forth in the table below.

Change in Allocation of Social Services Block Grants due to Census Undercount, by State, FY2016 -- Ranked

	FY2016 Grant	5.8% UC non-citizens	5.8% UC non-citizens + NRFU
California	$ 191,676,231	$ (1,683,013)	$ (223,450)
Texas	$ 134,505,064	$ (623,855)	$ (82,828)
New York	$ 96,931,926	$ (351,201)	$ (46,628)
Florida	$ 99,260,163	$ (182,317)	$ (24,206)
New Jersey	$ 43,863,741	$ (137,277)	$ (18,226)
Nevada	$ 14,155,291	$ (71,482)	$ (9,491)
Arizona	$ 33,434,253	$ (52,963)	$ (7,032)
Hawaii	$ 7,009,977	$ (15,904)	$ (2,112)
Washington	$ 35,110,289	$ (14,209)	$ (1,887)
Maryland	$ 29,410,899	$ (7,285)	$ (967)
Illinois	$ 62,970,158	$ (6,266)	$ (832)
Massachusetts	$ 33,269,517	$ (3,351)	$ (445)

3. Title I Grants to Local Education Agencies

56. Title I Grants are intended to help local educational agencies (LEAs) improve teaching and learning in high-poverty schools in particular for children failing, or most at-risk of failing, to meet challenging state academic standards.

57. The Title I program serves approximately 25 million students in more than 80 percent of school districts and nearly 60 percent of public schools. Total Title I funding ranged from approximately $14.41 billion in FY2015 to $15.43 billion in FY2018.

58. Title I, Part A funds are allocated through four separate formulas. All four formulas are based on a "formula child count," the number of children ages five to 17 from low-income families in each LEA. Other children counted for allocation purposes include children in families above the poverty line receiving Temporary Assistance for Needy Families, children in foster homes, and children in local institutions for neglected and delinquent children. Ninety-seven percent of the children calculated are from low-income families, with the remaining three percent from the other categories. Eligible LEAs receive funding based one or more of the formulas, but the final outcome of the Federal-State allocation process is a single Title I, Part A award to each qualifying LEA.

59. Three formulas are based primarily on the "formula child count" weighted by State per-pupil expenditures for education: (1) Basic Grants are awarded to school districts with at least ten formula children who make up more than two percent of their school-age population; (2) Concentration Grants provide additional funds to LEAs in which the number of formula children exceeds 6,500 or 15 percent of the total school-age population; and (3) Targeted Grants weight child counts to make higher payments to school districts with high numbers or percentages of formula children, such that an LEA must have at least ten formula children counted for Basic Grant purposes, and the count of formula children must equal at least five percent of the school age population.

60. The formula for Education Finance Incentive Grants (EFIG) also relies on the formula child count and then uses state-level "equity" and "effort" factors to make allocations to States that are intended to encourage States to spend more on education and to improve the equity

of State funding systems. Once State allocations are determined, sub-allocations to the LEA level are based on a modified version of the Targeted Grants formula.

61. In FY2018, the distribution of total funding by formula was 41.7 percent to Basic Grants, 8.8 percent to Concentration Grants, 24.8 percent to Targeted Grants, and 24.8 percent to EFIG.

62. In determining allocations under each of the four formulas, the statute requires the use of annually updated Census Bureau estimates of the number of children from low-income families in each LEA. There is roughly a two-year lag between the income year used for LEA poverty estimates and the fiscal year in which those estimates are used to make Title I allocations.

63. The Census Bureau annually prepares the Small Area Income and Poverty Estimates (SAIPE) for use in the allocation of Title I grants to LEAs. SAIPE makes estimates at the levels of state, county, and school district. Census-derived data sources for the estimation process include Population Estimates, the American Community Survey, and Personal Income (which in turn is based in part on the ACS). The ACS in turn is reliant on the decennial census and Population Estimates, as described earlier.

64. I have included below a table I created that reflects the states that would have been at risk of losing Title I funding in FY2016 under the two citizenship question-induced undercount scenarios. Specifically, California, Texas, New York, Florida, New Jersey, Nevada, Arizona, Hawaii, Washington, Maryland, Illinois, and Massachusetts would lose funds under both scenarios.

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65. It is my opinion that if either of the undercount scenarios are realized in the 2020 Census and if current program allocation formulas and funding levels remain similar over time, such an undercount would cause many of these same states to lose money from this program in the 2020s at approximately the same order of magnitude as the losses set forth in the table below.

Change in Allocation of Title I LEA Grants due to Census Undercount, by State, FY2016 -- Ranked

	FY2016 Grant	5.8% UC non-citizens	5.8% UC non-citizens + NRFU
California	$ 1,749,000,363	$ (15,278,566)	$ (2,028,420)
Texas	$ 1,367,579,292	$ (6,281,372)	$ (833,930)
New York	$ 1,140,729,371	$ (4,081,573)	$ (541,880)
Florida	$ 802,560,933	$ (1,437,825)	$ (190,889)
New Jersey	$ 343,129,691	$ (1,058,374)	$ (140,512)
Nevada	$ 120,121,711	$ (601,183)	$ (79,815)
Arizona	$ 344,902,908	$ (530,756)	$ (70,464)
Hawaii	$ 49,903,423	$ (110,966)	$ (14,732)
Washington	$ 242,701,346	$ (87,233)	$ (11,581)
Maryland	$ 206,626,467	$ (41,825)	$ (5,553)
Illinois	$ 682,473,823	$ (36,997)	$ (4,912)
Massachusetts	$ 238,963,767	$ (13,244)	$ (1,758)

66. Within any state that would lose Title I funds under the above scenario, any individual school district with a percentage of non-citizens higher than the percentage for the state as a whole would have a further decrease in funding when the funding received by the state is distributed to the local education agencies within that state. While a point-estimate decrease cannot be calculated without estimating the projected undercount due to the inclusion of the citizenship question for each school district receiving funds, I conclude with a high degree of professional certainty that under any of the undercount scenarios presented by Dr. Fraga, the Los Angeles Unified School District (LAUSD) would receive less Title I funding than it would in the absence of a citizenship status question.[2]

[2] According to 2017 ACS 1-year estimates, 19.6 percent of the population of the LAUSD are non-citizens, compared to 13.0 percent for the state of California and 6.9 percent for the United States.

V. OBSERVATIONS REGARDING THE IMPACT OF DIFFERENTIAL UNDERCOUNT ON FEDERAL ASSISTANCE TO SUBSTATE AREAS OF CALIFORNIA

A. WORKFORCE INNOVATION AND OPPORTUNITY ACT

67. Grants authorized by the Workforce Innovation and Opportunity Act (WIOA) are distributed to local workforce development areas through the Dislocated Workers program (Catalog of Federal Domestic Assistance (CFDA) #17.278, 29 U.S.C. § 3173(b)(2)(B)), the Adult Activities program (CFDA #17.258, 29 U.S.C. § 3173(b)(2)(A)), and the Youth Activities program (CFDA #17.259, 29 U.S.C. § 3163). Under each of these programs, funds are distributed first to states and then are distributed to local workforce development areas according to intrastate allocation formulas prescribed by federal law.[3]

68. ~~I can state with a high degree of professional certainty that California's state WIOA funding would be lower under each of the scenarios set forth by Dr. Fraga.~~

69. ~~Further, if the undercount scenarios identified by Dr. Fraga are realized, local workforce development areas within the state of California that have a percentage of non-citizen residents higher than the state average would receive a smaller share of a smaller California total, per under the federally-mandated intrastate allocation formula.~~[4]

70. The City of San José is located within a local workforce development area that also includes seven smaller cities (Campbell, Morgan Hill, Los Altos Hills, Gilroy, Los Gatos, Saratoga, and Monte Sereno) and the unincorporated area of Santa Clara County. According to the Census Bureau, San José accounted for 76.1 percent of the local workforce development area's population in 2017. As one consequence of the dominant place of San Jose in the local workforce development area, the administrative entity that receives and spends WIOA funds for the local workforce development area—called "work2future" —is operated by the City of San José Office of Economic Development on behalf of larger area. According to the 1-year 2017

[3] State and substate allocation formulas for the three WIOA programs are described in "Training and Employment Guidance Letter No. 16-17" (May 21, 2018) published by the U.S. Employment and Training Administration at https://wdr.doleta.gov/directives/corr_doc.cfm?DOCN=3332.

[4] ~~The list of local workforce development areas in California is available at https://www.edd.ca.gov/jobs_and_training/Local_Area_Listing.htm. A cross-reference of county by local workforce development area is available at https://www.edd.ca.gov/jobs_and_training/Local_Area_Listing_by_County.htm~~

ACS, 15.9 percent of the population across San José and the six largest secondary cities are non-citizens.[5] ~~As~~ these seven cities account for 93.4 percent of the local workforce development area's population, and as their estimated percentage of non-citizens is 2.9 percentage points above the California state average of 13.0 percent~~, I can conclude with a reasonable degree of professional certainty that the local workforce development entity operated by the City of San José would receive a decrease in WIOA funding under any of the undercount scenarios presented by Dr. Fraga~~.

B. COMMUNITY DEVELOPMENT BLOCK GRANT ENTITLEMENT PROGRAM

71. Under the Community Development Block Grant (CDBG) Entitlement Program (CFDA #14.218), the U.S. Department of Housing and Urban Development (HUD) provides funds to eligible "entitlement communities."[6] Each entitlement community receives funds from HUD according to a set of formulas prescribed in law and that includes data on population, poverty rates, and housing conditions. These data are derived from the ACS.

72. If Dr. Fraga's undercount scenarios due to the inclusion of a citizenship status question are realized, entitlement communities with a higher percentage of non-citizen residents relative to the percentage of non-citizen residents in entitlement communities nationwide will receive less funding under the CDBG Entitlement program than under the base scenario (absence of a citizenship question).

73. Based on the high percentage of non-citizen residents in San José relative to other relevant geographies, I conclude with a reasonable degree of professional certainty that it would receive a decrease in CDBG entitlement funding under any of the undercount scenarios presented by Dr. Fraga.[7]

[5] ~~The ACS does not provide 1-year estimates for Monte Sereno (population 3,578 in 2017, according to the U.S. Census Bureau's Population Estimates) and the unincorporated part of Santa Clara County (population 85,772 in 2017).~~

[6] Per Title 42, Chapter 69 of the U.S. Code, entitlement communities include principal (central) cities of metropolitan areas, other metropolitan-based cities (satellite) with populations of 50,000 persons or more, and statutorily defined urban counties whose populations may range from 100,000 to 200,000 persons. In FY2018, California has 184 entitlement communities, according to HUD at https://www.hudexchange.info/grantees/allocations-awards/.

[7] ~~The 1-year 2017 ACS estimates that 17.2 percent of San José residents are non-citizens, in comparison to figures of 7.7 percent for all metropolitan areas in the U.S., 8.1 percent for all urban counties in the U.S., and 10.2 percent for all principal cities in U.S. metropolitan areas, per tables created using data.census.gov. While the data website does~~

VI. CONCLUSION

74. In sum, it is my opinion, held to a strong degree of professional certainty, that for programs with allocation formulas based on a state's population relative to the nation, and assuming allocation formulas and funding levels remain similar, a differential decennial census undercount among noncitizens would lead to measurable fiscal losses for those states with percentages of those groups above the nationwide average.

I reserve the right to amend or supplement my opinions if additional information or materials become available. I declare under penalty of perjury under the laws of the United States and the State of California that the foregoing is true and correct to the best of my knowledge.

DATED: 12/28/18

Andrew Reamer, Ph.D.

~~not offer data for all entitlement communities, the three noted sets of geographies overlap substantially with the set of entitlement communities and the non-citizen percentage for each is in the range of half of San José's.~~

EXHIBIT A

IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

STATE OF CALIFORNIA, by and through Attorney General Xavier Becerra, Plaintiff, v. WILBUR L. ROSS, JR., in his official capacity as Secretary of the U.S. Department of Commerce; U.S. DEPARTMENT OF COMMERCE; RON JARMIN, in his official capacity as Acting Director of the U.S. Census Bureau; U.S. Census Bureau; DOES 1-100, Defendants.	Case No. 3:18-cv-01865
CITY OF SAN JOSE, a municipal corporation; and BLACK ALLIANCE FOR JUST IMMIGRATION, a California Non-Profit Corporation, Plaintiffs, vs. WILBUR L. ROSS, JR., in his official capacity as Secretary of the U.S. Department of Commerce; U.S. DEPARTMENT OF COMMERCE; RON JARMIN, in his official capacity as Acting Director of the U.S. Census Bureau; U.S. CENSUS BUREAU, Defendants.	Case No. 5:18-cv-02279

EXHIBIT
PTX-772

RULE 26(A)(2)(B) EXPERT REPORT AND DECLARATION OF ANDREW REAMER, PhD

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Appendix

1. Introduction

I have been retained by the New York State Office of the Attorney General (regarding Case 1:18-cv-02921-JMF in the Southern District of New York), the American Civil Liberties Union and Arnold & Porter (regarding Case 1:18-cv-05025 in the Southern District of New York), the State of California (regarding Case 3:18-cv-01865 in the Northern District of California), and the City of San Jose and the Black Alliance for Just Immigration (regarding Case 5:18-cv-02279 in the Northern District of California) to provide analyses of the impact of the inclusion of a question on citizenship status on the 2020 Census questionnaire on the distribution of particular federal domestic assistance funds to certain states, counties, and communities.

A. Qualifications

I am a research professor in the George Washington Institute of Public Policy (GWIPP) at the George Washington University in Washington, D.C. GWIPP research faculty focus on various aspects of the public policies of the federal, state, and local governments. GWIPP research is funded through grants and contracts from the federal government, philanthropies, and nonprofit research organizations.

My research aims to support U.S. national economic development and competitiveness. A substantial component of my work concerns the roles and functioning of the federal statistical system.

I am a member of several federal advisory committees—the U.S. Bureau of Labor Statistics (BLS) Data Users Advisory Committee (of which I am former chair), the BEA Advisory Committee, the National Advisory Council on Innovation and Entrepreneurship, and the Workforce Information Advisory Council.

I also am a member of the Statistics Committee of the National Association for Business Economics (NABE). The NABE Statistics Committee meets three times yearly with the directors of the U.S. Census Bureau, BEA, and BLS. I am helping to organize NABE's second annual Tech Economics Conference in San Francisco in October 2018, titled "Economics in the Age of Algorithms, Experiments, and A.I."

I am an active member and former president and board member of the Association of Public Data Users. I also am an active member of the Industry Studies Association and recently organized the Innovation and Entrepreneurship track of its annual conference in Seattle, WA.

I began my research at GWIPP in 2011, after six years at the Brookings Institution's Metropolitan Policy Program and 20 years as a consultant in U.S. regional economic development and public policy.

As a Fellow at Brookings, I was responsible for encouraging a strong, well-functioning federal statistical system that met the data needs of public and private stakeholders. To that end, I was instrumental in ensuring the commencement and continued existence of the American Community Survey (ACS). Throughout my career as an economic development consultant, I

prepared strategic analyses and plans that relied heavily on federal demographic and economic statistics.

I received a Ph.D. in Economic Development and Public Policy and a Master of City Planning from the Massachusetts Institute of Technology and a Bachelor of Science in Economics from the Wharton School, University of Pennsylvania.

I currently conduct the research project *"Counting for Dollars 2020: The Role of the Decennial Census in the Geographic Distribution of Federal Funds."* Project reports published or forthcoming in 2018 include:

- Report #1: Initial Analysis: 16 Large Census-guided Financial Assistance Programs (August 2017)[1]
- Report: #2 Estimating Fiscal Costs of a Census Undercount to States (March 2018)
- Report #3: Census-guided Financial Assistance to Rural America (forthcoming)
- Report #4: Census-derived Datasets Used to Distribute Federal Funds (forthcoming)
- Report #5: 50 Large Census-guided Financial Assistance Programs (forthcoming)
- Report #6: Federal Programs that Geographically Allocate Financial Assistance Based on Decennial Census Data (forthcoming)

While at the Brookings Institution, prior to the 2010 Census I published a Counting for Dollars study that identified census-guided federal financial assistance programs and calculated FY2008 funding flows by program to states, metro areas, and counties, although with a substantially smaller level of effort than my current project.[2] A full resume and list of publications is attached as an exhibit to this report.

B. Compensation

I am being compensated at the rate of $300 per hour.

C. Summary Opinions

Federal domestic financial assistance—in the form of direct payments to individuals, grants, loans, and guaranteed and insured loans—funds a substantial portion of the American economy and its system of federalism. In Fiscal Year (FY) 2017, the federal government provided $4.8 trillion through domestic financial assistance programs, an amount equal to 24.9 percent of Gross Domestic Product (GDP). About 30 percent of state government budgets are funded through the federal government.

[1] Reports #1 and #2 available at https://gwipp.gwu.edu/counting-dollars-2020-role-decennial-census-geographic-distribution-federal-funds.

[2] Andrew Reamer and Rachel Carpenter, "Counting for Dollars: The Role of the Decennial Census in the Distribution of Federal Funds," The Brookings Institution, March 9, 2010. Available at https://www.brookings.edu/research/counting-for-dollars-the-role-of-the-decennial-census-in-the-distribution-of-federal-funds/

A significant portion of federal domestic financial assistance is distributed on the basis of statistics derived from the Decennial Census. I have identified about 320 federal domestic assistance programs that use census-derived data to distribute about $900 billion in FY2016.

The two most important uses of Census-derived data to guide the distribution of federal assistance program funds: setting numerical eligibility criteria and geographically allocating funding through formulas.

The federal government uses 32 census-derived datasets to geographically distribute financial assistance. As the Decennial Census is carried out once a decade and collects data on a small number of demographic characteristics (such as household size and relationships, housing tenure, sex, age, race, ethnicity), Congress also recognizes that the decennial numbers, on their own, are not appropriate to guide the fair, equitable distribution of federal financial assistance. As a result, Congress has authorized a series of more current and more broadly descriptive datasets that are nonetheless derived from the Decennial Census.

Geographic allocation formulas are particularly sensitive to inaccuracies in census-derived data.

Per the table in the Appendix, I have identified 24 large federal financial assistance programs with geographic allocation formulas that rely in whole or part on census-derived data.

The census-derived datasets that are particularly important for determining the geographic allocation of funds by formula are the Census Bureau's Population Estimates and American Community Survey (ACS). There is a strong, direct relationship between the accuracy of the Decennial Census and the reliability of both the Population Estimates and the ACS.

As further described in Section 2(B), a 2020 Census differential undercount would affect each succeeding year's Population Estimate largely because the base of the Population Estimate is the 2020 count. Moreover, a 2020 Census differential undercount would affect each year's ACS data both because the Population Estimate provides the control for the ACS and because it would inaccurately alter the ACS sampling frame, sampling design, imputation, weighting, and variance. Further, as the ACS informs the net international migration estimate for the Population Estimates, an undercount would result in an undercount of that component of population change.

To measure the impact of a Decennial Census undercount on geographic formula allocations, I have, in Section 4, applied projected 2020 Census undercounts by state (as provided me by counsel for the plaintiffs and prepared by Prof. Bernard Fraga) to three example federal assistance programs— Title I Grants to Local Education Agencies, Supplemental Nutrition Program for Women, Infants, and Children (WIC), and the Social Services Block Grant.[3]

[3] While I relied on Prof. Fraga's projections, I did not rely on his report.

These three programs rely on state share of a U.S. population total (Title I—children ages 5-17 in poverty, WIC—infants and children ages 1-4 at or below 185 percent of poverty, and SSBG—total population).

For each of the three programs analyzed, the allocation of funds to each state is a function of that state's demographic characteristics relative to the nation as a whole, that is, the state's percentage share of a particular U.S. population (total, ages 0-4, ages 5-17).

Each of the undercount scenarios provided me by counsel would produce a differential undercount. That is, the extent of the undercount (as measured by percentage of the population missed) would vary greatly across states, reflecting the relative presence of non-citizens in the respective state populations.

In Section 4(D), I show that these undercount scenarios, had they occurred in previous years, would have caused several states to lose federal funds under the five funding programs. Based on this analysis, it is my opinion to a strong degree of professional certainty that, if any of the differential undercount scenarios provided to me are realized in the 2020 Census and if current allocation formulas and funding levels remain similar over time, such a differential undercount would cause many of these same states to lose money from the same programs at the same order of magnitude.

Specifically, I find that a differential undercount would result in a change in state population shares and a parallel change in funding allocations. Those states with an undercount greater than that for the U.S. as whole would lose share relative to the actual population and those states with an undercount less than the national average would gain share. Because a few large states (California, Texas, Florida, New York, and New Jersey in particular) have relatively high percentages of non-citizens, these states would lose population share while most other states would gain share. **If a differential undercount is present, this dynamic would be realized regardless of the size of the undercount nationwide, even, for instance, 0.1%.**

In sum, it is my opinion, held to a strong degree of professional certainty, that for programs with allocation formulas based on a state's population relative to the nation, and assuming allocation formulas and funding levels remain similar, a differential Decennial Census undercount would lead to measurable fiscal losses for those states with percentages of non-citizens above the nationwide average.

2. Background: Federal Domestic Financial Assistance Programs Guided by Data Derived from the Decennial Census

A. The System of Federal Domestic Assistance

As of November 2017, U.S. federal departments and agencies offered 2,249 total domestic assistance programs.[4] "Domestic assistance programs" provide either financial assistance (such as direct payments to individuals, grants, loans, and loan guarantees) and non-financial assistance (such as counseling) to non-federal entities within the U.S.—such as individuals, state and local governments, companies and nonprofits—in order to fulfill a public purpose. Federal domestic assistance is provided in every realm of domestic policy—examples include health care, education, economic development, transportation, social services, science, technology, criminal justice, and emergency management. Domestic assistance programs do not include foreign aid.

The *Catalog of Federal Domestic Assistance* (CFDA) is the federal government's compendium of all domestic assistance programs. The CFDA categorizes each program by type (across 15 categories) and gives it a five-digit CFDA number (such as 10.500) – the first two digits identify the sponsoring department or independent agency and the last three digits designate the individual program.[5]

Of the 15 categories of domestic assistance, six provide direct financial assistance (see box below). Two are in the form of grants, two are in the form of direct payments, one covers direct loans, and one covers guaranteed/insured loans.

[4] "Catalog Of Federal Domestic Assistance – CFDA," Investopedia, available at https://www.investopedia.com/terms/c/catalog-of-federal-domestic-assistance-cfda.asp

[5] The CFDA states:

> "Assistance" or "benefits" refers to the transfer of money, property, services, or anything of value, the principal purpose of which is to accomplish a public purpose of support or stimulation authorized by Federal statute. Assistance includes, but is not limited to grants, loans, loan guarantees, scholarships, mortgage loans, insurance, and other types of financial assistance, including cooperative agreements; property, technical assistance, counseling, statistical, and other expert information; and service activities of regulatory agencies. It does not include the provision of conventional public information services. (U.S. General Services Administration, *2017 Catalog of Federal Domestic Assistance*, October 2017, p. 1)

Until recently, the CFDA was available at www.cfda.gov. The information has been transferred to a new searchable website, https://beta.sam.gov/.

Categories of Direct Federal Domestic Financial Assistance[6]

A. Formula Grants - Allocations of money to States or their subdivisions in accordance with distribution formulas prescribed by law or administrative regulation, for activities of a continuing nature not confined to a specific project.

B. Project Grants - The funding, for fixed or known periods, of specific projects. Project grants can include fellowships, scholarships, research grants, training grants, traineeships, experimental and demonstration grants, evaluation grants, planning grants, technical assistance grants, survey grants, and construction grants.

C. Direct Payments for Specified Use - Financial assistance from the Federal government provided directly to individuals, private firms, and other private institutions to encourage or subsidize a particular activity by conditioning the receipt of the assistance on a particular performance by the recipient. This does not include solicited contracts for the procurement of goods and services for the Federal government.

D. Direct Payments with Unrestricted Use - Financial assistance from the Federal government provided directly to beneficiaries who satisfy Federal eligibility requirements with no restrictions being imposed on the recipient as to how the money is spent. Included are payments under retirement, pension, and compensatory programs.

E. Direct Loans - Financial assistance provided through the lending of Federal monies for a specific period of time, with a reasonable expectation of repayment. Such loans may or may not require the payment of interest.

F. Guaranteed/Insured Loans - Programs in which the Federal government makes an arrangement to indemnify a lender against part or all of any defaults by those responsible for repayment of loans.[7,8]

[6] *Ibid.,* pp. 1-2. The CFDA identifies each assistance category with a capital letter (A through O).

[7] Examples of recipients of federal direct and guaranteed/insured loans are students, homeowners, small businesses, and farmers.

[8] Insurance is an additional category of financial assistance, although one that does not result in an immediate financial transfer. This category includes such programs as bank deposit insurance, pension guarantees, disaster insurance (flood, crop), and terrorism and other security-related risks. The CFDA defines the Insurance category as "Financial assistance provided to assure reimbursement for losses sustained under specified conditions. Coverage may be provided directly by the Federal government or through private carriers and may or may not involve the payment of premiums." We have not found a census-guided federal insurance program and so that category is not part of this analysis.

In Fiscal Year (FY) 2017, the federal government provided $4,767,768,000,000 in direct domestic financial assistance programs across the above six categories, an amount equal to 24.9 percent of Gross Domestic Product (GDP).

- Of that total, $2,360,015,000,000 were **direct payments** to individuals and $674,700,000,000 were **grants**, primarily to state and local governments.[9]
- In addition, in FY2017 the federal government made commitments for **guaranteed loans** totaling $530,195,000,000 and **direct loan** obligations of $180,041,000,000.[10]

Federal Domestic Assistance by Category, FY2017	
Direct Payments to Individuals	$2,360,015,000,000
Grants	$674,700,000,000
Guaranteed Loans	$530,195,000,000
Direct Loans	$180,041,000,000
Total	**$4,767,768,000,000**

B. The Role of Census-derived Datasets in Guiding the Distribution of Federal Domestic Assistance

Article 1, Section 2 of the Constitution mandates a Decennial Census for the purposes of apportioning seats in the House of Representatives. In January 1790, Representative James Madison proposed (and Congress adopted) an amendment to the Census Act of 1790 to include questions on population characteristics beyond those needed for apportionment so that Congress might "adapt the public measures to the particular circumstances of the community." Agreeing with Madison, Congress added questions on race, gender, and age. Ever since, the Decennial Census has carried questions beyond those required for apportionment.[11]

[9] Figures from Historical Table 6.1 - Composition of Outlays: 1940–2023 of "Budget of the United States Government, Fiscal Year 2019," February 2018, available at https://www.whitehouse.gov/wp-content/uploads/2018/02/hist06z1-fy2019.xlsx.

[10] Office of Management and Budget, "Analytical Perspectives, Budget of the United States Government, Fiscal Year 2019," Supplemental Materials, February 2018, Table 19.8: Direct Loan Transactions of the Federal Government and Table 19.9: Guaranteed Loan Transactions of the Federal Government, available at https://www.whitehouse.gov/omb/analytical-perspectives/.

[11] Up through 1930, every household was required to answer each Decennial Census question. Sampling began in 1940. In 1960, most census questions were placed on the "long form" that went to a sample of households. In 2005, the "long form" questions were shifted to the new American Community Survey, which had been in development for about a decade.

For nearly 230 years, Congress has used the data from the Decennial Census questions to guide the design and implementation of public policies and programs. Moreover, from 1790 to the present, the large size and considerable complexity of the Decennial Census has regularly catalyzed significant advances in the statistical and survey sciences.

As directed or authorized by Congress, a substantial portion of federal domestic assistance is geographically distributed to state and local governments, households, businesses, and nonprofit organizations based on statistics derived from the Decennial Census. Congress recognizes that the appropriate, equitable distribution of certain forms of financial assistance should be guided by demographic and economic data at various levels of geography.

As the Decennial Census is carried out once a decade and collects data on a small number of demographic characteristics (such as household size and relationships, housing tenure, sex, age, race, ethnicity), Congress also recognizes that the decennial numbers, on their own, are not appropriate to guide the fair, equitable distribution of federal financial assistance. As a result, Congress has authorized a series of more current and more broadly descriptive datasets derived from the Decennial Census and made possible by the scientific advances mentioned above.

I refer to these as "census-derived datasets." **I have identified about 320 federal domestic assistance programs that use census-derived data to distribute about $900 billion in FY2016.**[12]

With the development of these new datasets over the course of the last century and with the extraordinary expansion of federal financial assistance in the last half-century, Congress has specified or authorized these new datasets be used to guide the appropriate, fair geographic distribution of federal funds.

Census-derived data may guide the distribution of federal assistance program funds in any of four ways.

- First, a program may use census-related data to define its **eligibility criteria**, that is, to determine which organizations or individuals can receive funds. For instance, for several Department of Agriculture (USDA) assistance programs, eligible recipients must be in a rural area, "rural" being defined as "any area other than a city, town, or unincorporated area that has a population of greater than 20,000 inhabitants."[13] To be eligible to receive payments from HUD's Rent Supplements Program (14.149), a household must be "low income," defined as earning 80 percent or less of area median family income (AMFI).[14]
- Second, a program may use census-related data in one or more formulas that **geographically allocate** funds among eligible recipients across the nation. For instance, HUD's Community Development Block Grants/Entitlement Grants Program

[12] Numbers in this range will be cited in forthcoming reports #3-6, described on p. 5.
[13] 7 USC 1991(a)(13)(C). This section provides multiple definitions of "rural," each applicable to a distinct set of programs.
[14] 42 USC 1437a

(14.218), a formula grant program, allocates funds to metropolitan cities and urban counties on the basis of population size, extent of poverty, extent of overcrowding, growth lag, and age of housing share.[15]

- Third, a program may make funding decisions on the basis of **selection preferences**, using census-related data to score project applications. So, for instance, the Department of Transportation's Federal Transit - Capital Investment Grants (20.500) selects projects, in part, based on population density.[16]
- Fourth, census-related data may be used to in formulas that determine **interest rates** for federal loan programs. USDA's Water and Waste Disposal Systems for Rural Communities (10.760) sets interest rates on the basis of area median household income.[17]

I have identified 32 census-derived datasets used by the federal government to geographically distribute financial assistance. (See schematic on next page.)

Six datasets can be considered **foundational**. The remaining 26 datasets are **extensions** of these.

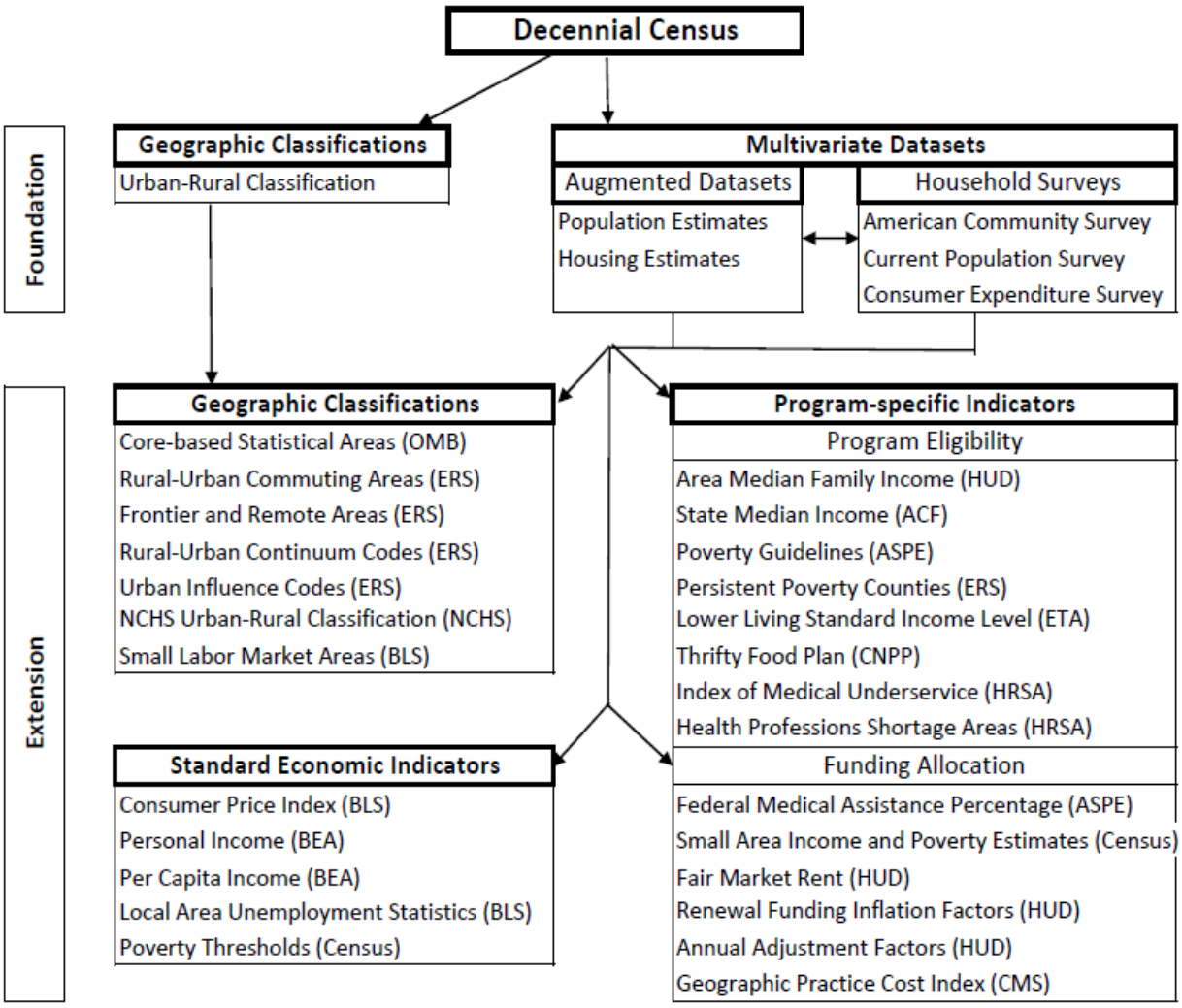
One foundational dataset is the Census Bureau's **Urban-Rural Classification** of every census tract based on Decennial Census population density. (The minimum density for an urban designation is 1,000 persons per square mile.) The Census Bureau publishes the Urban-Rural Classification once a decade (in the year ending in "2"). This classification is the primary basis for seven other geographic classifications in the extension group. It is the only census-derived dataset that relies solely on decennial numbers.[18]

The other five foundational datasets are multivariate—that is, they provide census-derived data on multiple socioeconomic variables such as race, age, poverty, occupation, and housing costs.

Two of these are **augmented datasets**. The Census Bureau constructs annual **Population Estimates** and **Housing Estimates** by augmenting decennial population and housing numbers with more recent data, primarily from vital statistics and tax records. For example, the Census Bureau annually updates Population Estimates by taking the previous year's numbers (starting with the decennial year) and adding births, subtracting deaths, and estimating net domestic and international migration.[19]

[15] 42 USC 5306
[16] 49 USC 5309
[17] 7 CFR 1780.13
[18] Detailed information on the Census Bureau's Urban-Rural Classification, including methodology, is available at https://www.census.gov/geo/reference/urban-rural.html.
[19] Detailed information on the Census Bureau's Population and Housing Unit Estimates, including methodology, is available at https://www.census.gov/programs-surveys/popest.html.

Census-derived Datasets for Distributing Federal Financial Assistance



Agencies Responsible for Census-Derived Datasets

ACF	Administration for Children and Families, Department of Health and Human Services (HHS)
ASPE	Asst. Secretary for Policy and Evaluation, HHS
BEA	Bureau of Economic Analysis, Department of Commerce
BLS	Bureau of Labor Statistics, Department of Labor (DOL)
Census	Census Bureau, Department of Commerce
CMS	Center for Medicare and Medicaid Services, HHS
CNPP	Center for Nutrition Policy and Promotion, Department of Agriculture (USDA)
ERS	Economic Research Service, USDA
ETA	Employment and Training Administration, DOL
HRSA	Health Resources and Services Administration, HHS
HUD	Department of Housing and Urban Development
NCHS	National Center for Health Statistics, HHS
OMB	Office of Management and Budget, White House

It uses a similar method to annually update Housing Estimates. Each of the variables in Population Estimates and Housing Estimates is on the decennial data collection form.

Population Estimates are frequently used directly to determine funds distribution, for instance, according to each state's share of the most recent U.S. population total. They also enable the creation of economic indicators that allow geographic areas to be compared regardless of size. A good example is state Per Capita Income (PCI), which is determined by dividing state Personal Income by state population (from Population Estimates).

The remaining three foundational datasets are produced through ongoing **household surveys** that collect information on demographic variables not on the decennial questionnaire (such as income, health insurance coverage, and housing costs). The Census Bureau relies on the Decennial Census to design and implement the **American Community Survey** (ACS), the **Current Population Survey** (CPS), and the **Consumer Expenditure Survey** (CEX).[20] It does so in five ways, as described in the table on the next page.

The two augmented datasets and the three household surveys are intertwined. In particular, the international in-migration component of Population Estimates comes from the ACS.[21] At the same time, Population Estimates are used as controls in the design and implementation of the household surveys.

The six foundational datasets enable the creation of 26 other census-derived datasets, in three categories:

- **Geographical classifications** – The designation of particular sets of geographic units (such as census tracts and counties) on the basis of some combination of population density (e.g., urban/rural), population size, and commuting patterns (e.g., metropolitan and micropolitan statistical areas). Each of the seven geographic classifications in the extension group make use of the Urban-Rural Classification and one or more of the multivariate datasets.
- **Standard economic indicators** – Widely-recognized measures of economic conditions (such as inflation, personal income, unemployment rate, and poverty rate) that can be used to guide a multitude of assistance programs.
- **Program-specific indicators** – Measures of specific economic conditions specifically created to administer a particular financial assistance program, for example, Section 8 housing vouchers and Title I grants to local education agencies).

[20] The Census Bureau conducts the CEX on behalf of BLS.

[21] Census Bureau, "Methodology for the United States Population Estimates: Vintage 2017, Nation, States, Counties, and Puerto Rico – April 1, 2010 to July 1, 2017," p. 10, available at https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/2010-2017/2017-natstcopr-meth.pdf.

The Roles of the Decennial Census in Household Survey Design and Analysis	
Sampling frame	The Census Bureau's Master Address File (MAF), the underpinning of the Decennial Census operation, provides the frame from which a survey sample is drawn.[22]
Sample design	The Decennial Census guides sample design in two ways. One is by delineating the primary sampling units from which samples are to be drawn and the sampling rates by which they are drawn. The second is to guide sample stratification, that is, the size of subsamples by characteristics such as race and household composition.[23]
Imputation	Nonresponses to individual questions are filled in by imputing, or "borrowing," answers from other households with similar characteristics.[24]
Weighting	In preparing survey estimates, the weight of each household's response is determined in relation to the estimated overall number of households and the estimated number of residents of similar age, sex, race, and Hispanic origin, as derived from the Decennial Census through annual population and housing estimates.[25]
Variance	To understand the reliability of any survey result, the survey sponsors need to produce estimates of variance, or sampling error, which also is based annual population and housing estimates.[26]

[22] See, for example, Census Bureau, "Chapter 3. Frame Development" in "American Community Survey: Design and Methodology," January 2014.
[23] See, for example, Danielle Neiman, Susan King, David Swanson, Stephen Ash, Jacob Enriquez, and Joshua Rosenbaum, "Review of the 2010 Sample Redesign of the Consumer Expenditure Survey," presented at the Joint Statistical Meetings, October 2015.
[24] See, for example, Census Bureau, "Section 10.6: Editing and Imputation" in "American Community Survey: Design and Methodology," January 2014.
[25] See, for example, Census Bureau, "Chapter 11. Weighting and Estimation," in "American Community Survey: Design and Methodology," January 2014.
[26] See, for example, Census Bureau, "Chapter 14: Estimation of Variance" in "Current Population Survey: Design and Methodology," Technical Paper 66, October 2006.

3. Background: Federal Assistance Programs Analyzed

A. Introduction – Focus on Federal Programs Guided by Census-derived Allocation Formulas

Most census-guided financial assistance programs use census-derived datasets to differentiate among geographic areas and then, through the four mechanisms discussed earlier (eligibility, allocation formula, selection preferences, interest rate formula), distribute funds based on those differentiations. The categories of geographic areas most frequently used are states, urbanized and non-urbanized areas, Core-based statistical areas (CBSAs), counties, cities, and places.

Across the breadth of census-guided programs, geographic differences in the accuracy of the Decennial Census will lead to distortions in the distribution of financial assistance. That said, **the sensitivity of funds distribution to census mismeasurement is by far the greatest for programs with *geographic allocation formulas* that rely on census-derived data.** Allocation formulas reflect a continuum of possible outcomes—place on that continuum is determined by specific statistics, often calculated to the one-hundredth or one-thousandth of a percent point. Even modest geographic differences in census accuracy can lead to changes in funds distribution.

In contrast, program eligibility is much less sensitive to missed coverage because there are only two possibilities—eligible or not eligible. Unless a census-derived statistic puts an applicant or a beneficiary on the boundary between these two outcomes, the level of inaccuracy has to be substantial to change the outcome. To take an extreme example, if the Decennial Census failed to count 30 percent of New York City's population, that geography still would not qualify as a rural area for the purposes of federal assistance.

Some portion of census-guided programs do not use subnational data to distribute funds—rather they uniformly apply a national economic indicator across geographies. The Consumer Price Index (CPI) is the most frequently used indicator for this purpose.[27] For instance, Census Bureau Poverty Thresholds and HHS Poverty Guidelines—which are used to determine beneficiary and grant applicant eligibility—are reset each year based on the CPI. These census-derived datasets are national in scope and not differentiated by place. Similarly, the CPI is used each year to uniformly reset the federal reimbursement rate for the National School Lunch Program for the 48 contiguous states.[28] For this group of census-derived programs, the geographic distribution of funding also is not highly sensitive to census inaccuracy.

The plaintiffs in this case contend that inclusion of a citizenship question on the Decennial Census will lead to significant geographic differences in census coverage and accuracy. They have asked me to demonstrate the impacts of these differences on the geographic distribution

[27] The CPI is census-derived in that it is based on the Consumer Expenditure Survey and the ACS, both of which are census-derived household surveys.

[28] See "School Meals: Rates of Reimbursement," Food and Nutrition Service, USDA, at https://www.fns.usda.gov/school-meals/rates-reimbursement. In this instance, while the 48 contiguous receive the same increase, Alaska, Hawaii, and Puerto Rico usually receive a higher cost-of-living adjustment.

of certain assistance programs that use census-derived data in their geographic allocation formulas. Three programs analyzed for this purpose, by sponsoring department, are:

- Title I Grants to Local Education Agencies, Department of Education (ED)
- Supplemental Nutrition Program for Women, Infants, and Children (WIC), Department of Agriculture (USDA)
- Social Services Block Grants, Department of Health and Human Services (HHS)

Basic background information on each of these programs is provided in the subsections below. Information elements provided are:

- Program name (CFDA #)
- Sponsor
- Objective
- Type of Assistance
- Applicants
- Beneficiary Eligibility
- Authorization
- Enrollments
- Recent Funding Amounts
- Allocation formula(s)
- Census-derived Datasets Used in Allocation Formulas[29]

The analysis of the differential impacts of census mismeasurement is provided in Section 4.

[29] Unless otherwise noted, information on each program is obtained from the *Catalog of Domestic Assistance*, *op. cit.*

B. Title I Grants to Local Education Agencies

Program name (CFDA #): Title I Grants to Local Educational Agencies (84.010)

Sponsor: Office of Elementary and Secondary Education, Department of Education[30]

Objective: To help local educational agencies (LEAs) improve teaching and learning in high-poverty schools in particular for children failing, or most at-risk of failing, to meet challenging State academic standards.

Type of Assistance: Formula Grants

Applicants: State and tribal governments. States distribute funds to LEAs.

Beneficiary Eligibility and Allowable Uses

In a targeted assistance program, children who are failing, or most at risk of failing, to meet challenging State academic standards. In a schoolwide program, all children in the school.

Use of funds varies, depending on whether a school is operating a schoolwide program under Section 1114 of the ESEA or a targeted assistance program under Section 1115 of the ESEA. A school with at least a 40 percent poverty rate may choose to operate a schoolwide program under Section 1114, which allows Title I funds to be combined with other Federal, State, and local funds to upgrade the school's overall instructional program in order to raise the achievement of the lowest-achieving students; a school that does not meet the 40 percent poverty threshold may also operate a schoolwide program if it receives a waiver to do so from the State educational agency (SEA). All other participating schools must operate a targeted assistance program, which provides extra instruction to those children failing, or most at risk of failing, to meet challenging State academic standards.

Authorization: Elementary and Secondary Education Act of 1965 (ESEA), as amended, Title I, Part A, 20 US Code 6301 et seq.

Enrollments: "The program serves an estimated 25 million students in more than 80 percent of school districts and nearly 60 percent of all public schools."[31]

Recent Funding Amounts[32]

FY2010	$14,492,401,000
FY2011	$14,442,927,000
FY2012	$14,516,457,000
FY2013	$13,760,219,000

[30] Program webpage at https://www2.ed.gov/programs/titleiparta/index.html.
[31] Department of Education, "Education for the Disadvantaged: Fiscal Year 2019 Budget Request," p. A-12, at https://www2.ed.gov/about/overview/budget/budget19/justifications/a-ed.pdf.
[32] Education Department, "Department of Education Budget Tables," available at https://www2.ed.gov/about/overview/budget/tables.html.

FY2014	$14,384,802,000
FY2015	$14,409,802,000
FY2016	$14,909,802,000
FY2017	$15,386,180,000
FY2018	$15,428,437,000

Allocation formula(s)

Title I, Part A funds are allocated through four separate formulas. **All four formulas are based on the number of children ages 5-17 from low-income families in each LEA**.

Other children counted for allocation purposes ("formula child count") include children in families above the poverty line receiving Temporary Assistance for Needy Families (the main Federal-State income maintenance program), children in foster homes, and children in local institutions for neglected and delinquent (N&D) children. Ninety-seven percent of formula children are from low-income families, with the remaining three percent from the second and third categories.[33]

Eligible LEAs receive funding under one or more of the formulas, but the final outcome of the Federal-State allocation process is a single Title I, Part A award to each qualifying LEA.

Three formulas are based primarily on the number of formula children in each LEA, weighted by State per-pupil expenditures for education. Basic Grants are awarded to school districts with at least 10 formula children who make up more than 2 percent of their school-age population (defined as children ages 5 to 17) and, thus, spread funds thinly across nearly all LEAs.

Concentration Grants provide additional funds to LEAs in which the number of formula children exceeds 6,500 or 15 percent of the total school-age population. The Targeted Grants formula weights child counts to make higher payments to school districts with high numbers or percentages of formula students. To be eligible for Targeted Grants, an LEA must have at least 10 formula children counted for Basic Grant purposes, and the count of formula children must equal at least 5 percent of the school age population.

In addition, the statute includes a separately authorized and funded Education Finance Incentive Grants (EFIG) formula. This formula uses State-level "equity" and "effort" factors to make allocations to States that are intended to encourage States to spend more on education and to improve the equity of State funding systems. Once State allocations are determined, sub-allocations to the LEA level are based on a modified version of the Targeted Grants formula.[34]

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[33] Department of Education, "Title I Allocation Formulas," presentation at the National Title I Conference, February 2018, Philadelphia, Pennsylvania, available at https://www2.ed.gov/about/offices/list/oese/oss/technicalassistance/titleiallocationformulastitleiconfppt22018.pdf.

[34] Education Department, "Department of Education Budget Tables," p. A-15, available at https://www2.ed.gov/about/overview/budget/tables.html.

In FY2018, the distribution of total funding by formula was:

Basic Grants	41.7%
Concentration Grants	8.8%
Targeted Grants	24.8%
EFIG	24.8%[35]

Census-derived Datasets Used in Allocation Formulas

In determining allocations under each of the four formulas, the statute requires the use of annually updated Census Bureau estimates of the number of children from low-income families in each LEA. There is roughly a 2-year lag between the income year used for LEA poverty estimates and the fiscal year in which those estimates are used to make Title I allocations. For example, the fiscal year 2016 allocations were based on LEA poverty estimates for 2014. The Department transfers a small amount of funding from the annual Title I appropriation to the Census Bureau to finance the preparation of these LEA poverty estimates.[36]

The Census Bureau annually prepares the **Small Area Income and Poverty Estimates** (SAIPE) for use in the allocation of Title I grants to LEAs. SAIPE makes estimates at the levels of state, county, and school district. Census-derived data sources for the estimation process include **Population Estimates**, the **American Community Survey**, and **Personal Income** (which in turn is based in part on the ACS).[37] The ACS in turn is reliant on the Decennial Census and Population Estimates, as described earlier.[38]

[35] *Ibid*., p. A-17.
[36] Department of Education, "Education for the Disadvantaged: Fiscal Year 2019 Budget Request," pp. A-15-16, at https://www2.ed.gov/about/overview/budget/budget19/justifications/a-ed.pdf.
[37] Census Bureau, "SAIPE Methodology," at https://www.census.gov/programs-surveys/saipe/technical-documentation/methodology.html.
[38] Census Bureau, "American Community Survey: Design and Methodology," January 2014, at https://www.census.gov/programs-surveys/acs/methodology/design-and-methodology.html.

C. Supplemental Nutrition Program for Women, Infants, and Children (WIC)

Program name (CFDA #): Supplemental Nutrition Program for Women, Infants, and Children (10.557)

Sponsor: Food and Nutrition Service (FNS), Department of Agriculture[39]

Objective: To provide low-income pregnant, breastfeeding and postpartum women, infants, and children to age 5 who have been determined to be at nutritional risk, supplemental nutritious foods, nutrition education, and referrals to health and social services at no cost.

Type of Assistance: Formula Grants

Applicants: Each state receives funds. A local agency is eligible to apply to the state agency to deliver locally the services of the WIC Program, provided that: (1) it serves a population of low-income women, infants, and children at nutritional risk; and (2) it is a public or private nonprofit health or human service agency.

WIC operates through 1,900 local agencies in 10,000 clinic sites. Nearly all states administer their Supplement Food programs through a retail food delivery system of approximately 47,000 authorized retailers nationally.[40]

Beneficiary Eligibility: Pregnant, breastfeeding and postpartum women, infants, and children up to 5 years of age are eligible if: (1) they are individually determined by a competent professional to be in need of the special supplemental foods supplied by the program because of nutritional risk; and (2) meet an income standard, or receive or have certain family members that receive benefits under the Supplemental Nutrition Assistance, Medicaid or Temporary Assistance for Needy Families Programs. They must also reside in the state in which benefits are received.

"Low-income" is defined as at or below 185 percent of the U.S. Poverty Income Guidelines. For the period of July 1, 2016 to June 30, 2017, this represented $44,955 for a family of four.[41]

State agencies have the option to limit WIC eligibility to U.S. citizens.[42]

Authorization: Child Nutrition Act of 1966, as amended, Section 17, 42 USC 1786. Healthy, Hunger-Free Kids Act of 2010, Public Law 111-296, 7 USC 1746.

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[39] WIC program website at https://www.fns.usda.gov/wic/women-infants-and-children-wic.
[40] Congressional Research Service, "A Primer on WIC: The Special Supplemental Nutrition Program for Women, Infants, and Children," Report R44115, April 7,2017, available at https://www.everycrsreport.com/files/20170407_R44115_6016e730b90870b2d72a71fa9e0d8c70285d73ea.pdf.
[41] U.S. Department of Agriculture, "2019 President's Budget: Food and Nutrition Service," February 2018, p. 32-64, available at https://www.obpa.usda.gov/32fns2019notes.pdf.
[42] 7 CFR 246.7(c)(2)

Enrollments: In 2016, 7.7 million people participated in WIC each month, on average—1.8 million women, 1.8 million infants, and 4.0 million children under 5. Average monthly participation has declined steadily since 2010, when it was 9.2 million.[43]

Recent Funding Amounts:[44]

FY2015	$6,670,377,000
FY2016	$6,730,000,000
FY2017	$6,512,698,000
FY2018	$6,501,000,000

Allocation formula(s)

Two types of WIC grants are provided to each state. The first is for Nutrition Services and Administration (NSA) costs, to cover the costs of running the program and providing assistance services. The second is Supplemental Food. In FY2018, $2.1 billion was provided in NSA funds and $4.4 billion for Supplemental Food.

The formula for NSA grants is determined by a per participant formula, adjusted for inflation.

Once NSA grants are made, the remaining funds are allocated as Supplement Food grants. They are apportioned by each state's share of the nationwide number of infants and children ages 1-4 at or below 185 percent of poverty. This is considered the "fair share target funding level." FNS regulations indicate that to extent funds are available, each state is to receive at least its prior year grant allocation; if funds continue to be available, each state's grant is adjusted for inflation in food costs; if funds continue to be available, each state receives funds up to its fair share target funding level.[45]

Census-derived Datasets Used in Allocation Formulas

In the fall of each year, FNS publishes a memo of "State-Level Estimates of Infants and Children [Ages 1-4] At or Below 185 Percent of Poverty" based on **American Community Survey** data from the calendar year two years prior and for use in the upcoming fiscal year. For instance, in September 2015, FNS published 2013 state-level estimates for use in FY2016.[46] The ACS in turn is reliant on the Decennial Census and Population Estimates, as described earlier.[47]

FNS uses the census-derived **Thrifty Food Plan** to determine food cost inflation.[48] That inflation is based on the **Consumer Price Index** (CPI) for specific food items. The food component of the CPI in turn is based the **Consumer Expenditure Survey**.

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[43] *Ibid.*, p. 32-73.
[44] *Ibid.*, p. 32-60. FY2015 data from the 2018 FNS budget request.
[45] 7 CFR 246.16(c)
[46] See FNS, "WIC Funding and Program Data" at https://www.fns.usda.gov/wic/wic-funding-and-program-data.
[47] Census Bureau, "American Community Survey: Design and Methodology," January 2014, at https://www.census.gov/programs-surveys/acs/methodology/design-and-methodology.html.
[48] See FNS, "USDA Food Plans: Cost of Food" at https://www.cnpp.usda.gov/USDAFoodPlansCostofFood.

D. Social Services Block Grants

Program name (CFDA #): Social Services Block Grant (93.667)

Sponsor: Office of Community Services, Administration for Children and Families (ACF), HHS[49]

Objective

To enable each State to furnish social services best suited to the needs of the individuals residing in the State. Federal block grant funds may be used to provide services directed toward one of the following five goals specified in the law: (1) To prevent, reduce, or eliminate dependency; (2) to achieve or maintain self-sufficiency; (3) to prevent neglect, abuse, or exploitation of children and adults; (4) to prevent or reduce inappropriate institutional care; and (5) to secure admission or referral for institutional care when other forms of care are not appropriate.

Type of Assistance: Formula Grants

Applicants: States and territories

Beneficiary Eligibility

Each eligible jurisdiction determines the services that will be provided and the individuals that will be eligible to receive services.

According to HHS, "Service categories most frequently supported by SSBG include child care, child welfare, services for persons with disabilities, case management services, and protective services for adults."[50]

Authorization: Title XX of the Social Security Act

Recipients: In FY 2014 (the latest year for which data are available), about 30 million people received services supported at least partially by SSBG funds.[51] ACF has a set of detailed state profiles for FY2015 on SSBG recipients and type of use.[52]

Recent Funding Amounts: In FY2017, $1.574 billion in SSBG funds was distributed to the 50 states plus the District of Columbia. In FY2018, the amount was $1.579 billion.[53]

Allocation formula(s): Funds are allocated based on each state's share of total population for the 50 states and the District of Columbia "as determined by the Secretary [of Health and

[49] Program home page at https://www.acf.hhs.gov/ocs/programs/ssbg.
[50] ACF, "SSBG Fact Sheet," at https://www.acf.hhs.gov/ocs/resource/ssbg-fact-sheet.
[51] *Ibid.*
[52] "Fiscal Year 2015 SSBG State Profile" at https://www.acf.hhs.gov/sites/default/files/ocs/rpt_ssbg_state_data_fy2015_0.pdf.
[53] ACF, "FY 2019 Justification of Estimates for Appropriations Committees," p. 259, at https://www.acf.hhs.gov/sites/default/files/olab/acf_master_cj_acf_final_3_19_0.pdf.

Human Services] (on the basis of the most recent data available from the Department of Commerce)."[54]

Census-derived Datasets Used in Allocation Formulas

Population Estimates are used to determine each state's allocation of SSBG funds. The calculation of Populations Estimates is based on the **Decennial Census** and adjusted each year in part basis on international migration as calculated by the **American Community Survey**.[55] The ACS in turn is reliant on the Decennial Census and Population Estimates as described earlier.[56]

[54] 42 USC § 1397b

[55] Census Bureau, "Methodology For The United States Population Estimates: Vintage 2017, Nation, States, Counties, and Puerto Rico – April 1, 2010 to July 1, 2017," at https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/2010-2017/2017-natstcopr-meth.pdf.

[56] Census Bureau, "American Community Survey: Design and Methodology," January 2014, at https://www.census.gov/programs-surveys/acs/methodology/design-and-methodology.html.

4. Estimated Impact of the Inclusion of a Citizenship Question on the Geographic Distribution of Federal Domestic Assistance

In this section, I demonstrate the nature of the fiscal impacts of the inclusion of a citizenship question on the 2020 Census on the distribution of federal domestic assistance. I do so by illustrating the effects that different scenarios of differential undercounts would have on the distribution to states of funds from five programs with relatively straightforward census-derived allocation formulas— Title I Grants to LEAs, WIC, and SSBG.

I begin by describing my assumptions and general methodology. I then discuss the general effects of an undercount on census-derived datasets and geographic allocation by formula. I then show the impacts of a citizenship question on each of the five programs.

A. Methodology

My analysis relies on the estimates provided to the plaintiffs by retained expert Prof. Bernard Fraga regarding the percent of residents missed in each state due to the inclusion of a citizenship question on the 2020 Census questionnaire. Prof. Fraga provides three numbers for each state – a 2020 baseline population projection (that assumes no citizenship question) and an estimate of percent of population undercount in each of two scenarios if the citizenship question is included. These scenarios are:

1. 5.8 percent non-response in households with at least one non-citizen
2. 5.8 percent non-response in households with at least one non-citizen, with a non-response follow-up (NRFU) success rate of 86.63 percent

In each of my program analyses, the baseline case is actual FY2016 funding by state.[57] I then calculate the impact on each state of each of the undercount scenarios **as if they occurred in the 2010 Census**. Actual appropriations, of course, are not known for years subsequent to the 2020 Census.

The three programs analyzed rely on state share of a U.S. population total (Title I—children ages 5-17 in poverty, WIC—infants and children ages 1-4 at or below 185 percent of poverty, SSBG—total population).

The estimation methodology for Title I grants included sequential calculations of:

- each state's percent share of population under the baseline 2020 scenario and the four undercount scenarios,
- each state's ratio of revised share to baseline share under each scenario,
- each state's percent share of children ages 5-17 in poverty in 2014 (most recent year before start of FY2016),[58]

[57] Data on FY2016 grants by state for Title I and SSBG were obtained from USASpending.gov and for WIC, from "WIC Program Grant Levels by State agency" at https://www.fns.usda.gov/wic/wic-funding-and-program-data.
[58] Obtained from the Census Bureau's SAIPE interactive data tool at https://www.census.gov/data-tools/demo/saipe/saipe.html?s_appName=saipe&map_yearSelector=2016&map_geoSelector=aa_c.

- each state's revised percent share of children ages 5-17 in poverty under each scenario (multiplying actual share by ratio of revised population share to baseline population share),
- each state's ratio of revised share of children ages 5-17 in poverty to baseline share under each scenario,
- each state's percent share of actual FY2016 grant spending,
- each state's percent share of FY2016 grant spending under each scenario (multiplying actual share by ratio of revised share of children ages 5-17 in poverty in FY2016 to actual share),
- each state's grant under each scenario (multiplying the revised share by the actual total FY2016 spending), and
- the difference between the actual and revised state grant under each scenario.

The estimation methodology for WIC grants included sequential calculations of:

- each state's percent share of population under the baseline 2020 scenario and the four undercount scenarios,
- each state's ratio of revised share to baseline share under each scenario,
- each state's percent share of children ages 0-4 at or below 185% of poverty per FNS memo for use in FY2016,[59]
- each state's revised percent share of children ages 0-4 at or below 185% of poverty under each scenario (multiplying actual share by ratio of revised population share to baseline population share),
- each state's ratio of revised share of children ages 0-4 at or below 185% of poverty to baseline share under each scenario,
- each state's percent share of actual FY2016 grant spending,
- each state's percent share of FY2016 grant spending under each scenario (multiplying actual share by ratio of revised share of children ages 0-4 at or below 185% of poverty in FY2016 to actual share),
- each state's grant under each scenario (multiplying the revised share by the actual total FY2016 spending), and
- the difference between the actual and revised state grant under each scenario.

This analysis includes only WIC Food Supplement grants, not Nutrition Services and Administration (NSA) grants, the geographic distribution of which is not census-derived.

The estimation methodology for SSBG included sequential calculations of:

- each state's percent share of population under the baseline 2020 scenario and the four undercount scenarios,
- each state's ratio of revised share to baseline share under each scenario,

[59] Debra Whitford, "2013 State-Level Estimates of Infants and Pre-School-Age Children at or Below 185 Percent of Poverty," September 1, 2015, available at https://fns-prod.azureedge.net/sites/default/files/wic/2013%20State-Level-Estimates-of-Infants-and-Pre-School-Age-Children-at-or%20....pdf.

- each state's percent share of actual FY2016 grant spending,
- each state's percent share of FY2016 grant spending under each scenario (multiplying actual share by ratio of revised population share to baseline population share),
- each state's grant under each scenario (multiplying the revised share by the actual total FY2016 spending), and
- the difference between the actual and revised state grant under each scenario.

I assumed that each of Prof. Fraga's scenarios affected each population age group similarly, without revision. For example, for the purposes of the WIC analysis, a 5.8 percent undercount of all non-citizens is taken to mean a 5.8 percent undercount of non-citizen children ages 0-4.[60]

[60] For each program, the methodology includes a slight adjustment after each round of population and grant share estimation to ensure that sum of shares equals 100.00000%. For Title I, the largest adjustment was 1/1000 of a percent; for WIC, 3/1000 of a percent; and for SSBG, 1/10000 of a percent.

B. Estimated Impacts of an Undercount on the Geographic Distribution of Funds from Individual Domestic Assistance Programs

Each of the following subsections provides a table identifying the states that would lose program funds under provided two scenarios and the size of that loss for the fiscal year analyzed, followed by discussion.

i.Title I Grants to Local Education Agencies

The table below indicates that California would have been at risk of losing Title I LEA grant funding in FY2016 under each of the two scenarios based on a 5.8% undercount of non-citizens. More specifically, California would be one of 12 states losing grant funds; it would account for 52% of the total loss among the 12 states; and its loss would equal 0.1-0.9% of its actual grant.

If either of the differential undercount scenarios is realized in the 2020 Census and if current program allocation formulas and funding levels remain similar over time, such a differential undercount would cause many of these same states to lose money from this program in the 2020s at approximately the same order of magnitude as the losses set forth in the table below.

Change in Allocation of Title I LEA Grants due to Census Undercount, by State, FY2016 -- Ranked

	FY2016 Grant	5.8% UC non-citizens	5.8% UC non-citizens + NRFU
California	$ 1,749,000,363	$ (15,278,566)	$ (2,028,420)
Texas	$ 1,367,579,292	$ (6,281,372)	$ (833,930)
New York	$ 1,140,729,371	$ (4,081,573)	$ (541,880)
Florida	$ 802,560,933	$ (1,437,825)	$ (190,889)
New Jersey	$ 343,129,691	$ (1,058,374)	$ (140,512)
Nevada	$ 120,121,711	$ (601,183)	$ (79,815)
Arizona	$ 344,902,908	$ (530,756)	$ (70,464)
Hawaii	$ 49,903,423	$ (110,966)	$ (14,732)
Washington	$ 242,701,346	$ (87,233)	$ (11,581)
Maryland	$ 206,626,467	$ (41,825)	$ (5,553)
Illinois	$ 682,473,823	$ (36,997)	$ (4,912)
Massachusetts	$ 238,963,767	$ (13,244)	$ (1,758)

ii. Supplemental Food Grants, Supplemental Nutrition Program for Women, Infants, and Children (WIC)

The table below indicates that California would have been at risk of losing WIC Supplemental Food grant funding in FY2016 under each of the two scenarios based on a 5.8% undercount of non-citizens. More specifically, California would be one of eight states losing grant funds; it would account for two-thirds of the total loss among the eight states; and its loss would equal 0.1-0.8% of its actual grant.

If either of the differential undercount scenarios is realized in the 2020 Census and if current program allocation formulas and funding levels remain similar over time, such a differential undercount would cause many of these same states to lose money from this program in the 2020s at approximately the same order of magnitude as the losses set forth in the table below.

Change in Fair Allocation of WIC Supplemental Food Grants due to Census Undercount, by State, FY2016 -- Ranked

	FY2016 Grant	5.8% UC non-citizens	5.8% UC non-citizens + NRFU
California	$ 794,007,601	$ (6,411,831)	$ (850,759)
Texas	$ 343,031,514	$ (1,348,106)	$ (178,875)
New York	$ 355,447,937	$ (1,035,875)	$ (137,446)
Florida	$ 262,440,234	$ (295,665)	$ (39,231)
New Jersey	$ 110,294,193	$ (266,955)	$ (35,421)
Nevada	$ 34,626,614	$ (150,348)	$ (19,949)
Arizona	$ 103,737,067	$ (90,639)	$ (12,027)
Hawaii	$ 20,646,627	$ (32,187)	$ (4,271)

iii. Social Services Block Grants (SSBG)

The table below indicates that California would have been at risk of losing SSBG funding in FY2016 under each of the two scenarios based on a 5.8% undercount of non-citizens. More specifically, California would be one of 12 states losing grant funds; it would account for 53% of the total loss among the 12 states; and its loss would equal 0.1-0.9% of its actual grant.

If either of the differential undercount scenarios is realized in the 2020 Census and if current program allocation formulas and funding levels remain similar over time, such a differential undercount would cause many of these same states to lose money from this program in the 2020s at approximately the same order of magnitude as the losses set forth in the table below.

Change in Allocation of Social Services Block Grants due to Census Undercount, by State, FY2016 -- Ranked

	FY2016 Grant	5.8% UC non-citizens	5.8% UC non-citizens + NRFU
California	$ 191,676,231	$ (1,683,013)	$ (223,450)
Texas	$ 134,505,064	$ (623,855)	$ (82,828)
New York	$ 96,931,926	$ (351,201)	$ (46,628)
Florida	$ 99,260,163	$ (182,317)	$ (24,206)
New Jersey	$ 43,863,741	$ (137,277)	$ (18,226)
Nevada	$ 14,155,291	$ (71,482)	$ (9,491)
Arizona	$ 33,434,253	$ (52,963)	$ (7,032)
Hawaii	$ 7,009,977	$ (15,904)	$ (2,112)
Washington	$ 35,110,289	$ (14,209)	$ (1,887)
Maryland	$ 29,410,899	$ (7,285)	$ (967)
Illinois	$ 62,970,158	$ (6,266)	$ (832)
Massachusetts	$ 33,269,517	$ (3,351)	$ (445)

5. Conclusion

In sum, it is my opinion, held to a strong degree of professional certainty, that for programs with allocation formulas based on a state's population relative to the nation, and assuming allocation formulas and funding levels remain similar, a differential Decennial Census undercount would lead to measurable fiscal losses for those states with percentages of non-citizens above the nationwide average.

Other sources considered but not relied upon:

Juan Carlos Suarez Serrato and Philippe Wingender, *Estimating Local Fiscal Multipliers; Working Paper 22425*, National Bureau of Economic Research (July 2016), http://www.nber.org/papers/w22425.pdf.

Formula Grants; Effects of Adjusted Population Counts on Federal Funding to States, U.S. General Accounting Office (February 1999), https://www.gao.gov/assets/230/226956.pdf.

Christopher Warshaw, *The Effect of an Undercount on the Census due to a Citizenship Question on Population Counts, Apportionment, and the Distribution of Political Power in America* (Sept. 7, 2018).

I reserve the right to amend or supplement my opinions if additional information or materials become available.

I declare under penalty of perjury under the laws of the United States that the forgoing is true and correct to the best of my knowledge.

DATED this 18th Day of September 2018

ANDREW REAMER

Appendix

Federal Assistance Programs with Allocation Formuals Affected by Differential Census Undercount

		Total FY2016 Expenditure	Recipient	Allocation Formula	Notes	Census-derived Figures Determine Funding in Whole or in Part?	Legal Basis
	FMAP				Lower population estimate leads to greater per capita income and a smaller FMAP		
	Payments to States			Reimbursement =			
1	Medical Assistance Program (93.778)	$361,218,476,000	States	FMAP x state expenditures		Whole	42 USC 1396d(b)
2	State Children's Health Insurance Program (93.767)	$13,761,924,000	States	E-FMAP x state expenditures	E-FMAP = state FMAP + (0.3 * (100–FMAP)). Min is 65, max is 85.	Whole (note allotment below)	42 USC 1397ee(2)
3	Foster Care (93.658)	$4,727,773,596	States	FMAP x state expenditures		Whole	45 CFR 1356.60(a)(2)
4	Adoption Assistance (93.659)	$2,591,755,519	States	FMAP x state expenditures		Whole	45 CFR 1356.60(a)(2)
	Payments by States			Payment =			
5	Medicare Part D Clawback	$9,800,000,000	States	(100 - FMAP) x 0.75 x # dual eligibles with full Medicaid benefits x State per capita Part D contribution rate		Whole	42 CFR 423.910
6	Child Care (93.596)	$2,840,075,000	States	Federal allotment x ((100 -FMAP)/FMAP)		Whole	45 CFR 98.55
	Programs Based on Share of:				Lower population estimate leads to lower share		
	Total Population						
8	Federal Transit Formula Grants (20.507)	$8,871,200,000	Transit agencies, States, and local governments	Share of urbanized population, population density		Part	49 USC 5336
9	Community Development Block Grants/Entitlement Grants (14.218)	$3,060,000,000	Cities and urban counties	Share of population, extent of poverty, extent of overcrowding, growth lag, and age of housing		Whole	42 USC 5306
10	Crime Victim Assistance (16.575)	$2,251,629,971	States	State share of population		Part	42 USC 10603
	Children and Youth						
11	Title I Grants to LEAs (84.010)	$14,364,454,918	States – passthrough to LEAs	Number of children and children in poverty		Whole	20 USC 6333-37
2	State Children's Health Insurance Program (93.767)	$13,761,924,000	States	Allotment based on number of low-income children and number of low-income children w/o health insurance		Part (note reimbursement above)	42 USC 1397dd
12	Special Education Grants (84.027)	$11,779,555,245	States – passthrough to LEAs	Share of children and children in poverty		Whole (with limits)	20 USC 1411
13	Head Start (93.600)	$8,648,933,810	States	Share of children and children in poverty		Part	42 USC 9835
14	Supplemental Nutrition Program for Women, Infants, and Children (10.557)	$6,383,830,000	States – passthrough to local agencies	Share of person eligible to participate at 185% of poverty		Part	7 CFR 246.16
15	Child Care and Development Block Grant (93.575)	$2,612,564,000	States	Share of population under 5, inversely weighted by PCI	Undercount compounded by FMAP-like effect	Part	42 USC 9858m
16	Supporting Effective Instruction State Grants (84.367)	$2,255,837,000	States	Share of children 5-17 and children 5-17 in poverty	Formula changes every year	Part	20 USC 6611
17	WIOA Youth Activities (17.259)	$858,000,000		Share of persons 16-21 in poverty		Part	29 USC 2852

	Adults							
18	Rehabilitation Services - Vocational Rehabilitation Grants to the States (84.126)	$2,981,765,509	States	Share of population, adjusted for PCI	Undercount compounded by FMAP-like effect	Whole	29 USC 730
19	Unemployment Insurance (17.225) -- Admin costs	$2,717,410,000	States	Share of population		Part	42 USC 502
20	Block Grants for Prevention and Treatment of Substance Abuse (93.959)	$1,759,749,115	States	Number of population 18-24, 25-44, 45-64, 65+		Part	42 U.S.C. 300x-33
21	Social Services Block Grant (93.667)	$1,584,400,000	States	Share of total population		Whole	42 USC 1397b
22	Career and Technical Education - Basic Grants to States (84.048)	$1,099,381,153	States	Shares of population 15-19, 20-24, and 25-65, adjusted for PCI	Undercount compounded by FMAP-like effect	Whole	20 USC 2321
23	WIOA Dislocated Worker Formula Grants (17.278)	$1,021,000,000	States -- passthrough to local agencies	Share of disadvantaged persons age 16-21 and adult		Part	ETA TEGL 16-17
	Seniors						
24	Special Programs for the Aging, Title III, Part C, Nutrition Services (93.045)	$1,364,209,620	States	Share of population 60+		Whole	42 USC 3024

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Education

- Ph.D. in Economic Development and Public Policy, Department of Urban Studies and Planning, Massachusetts Institute of Technology (1987)
- Master in City Planning, Department of Urban Studies and Planning, Massachusetts Institute of Technology (1981)
- Bachelor of Science in Economics, cum laude, Wharton School, University of Pennsylvania (1971)

Professional Experience

Research Professor, George Washington Institute of Public Policy, George Washington University (2011-present)

Focus on policies that encourage and support U.S. economic competitiveness. Areas of interest include innovation, regional economic and workforce development, and economic statistics.

Advisory Committees

- Member, Workforce Information Advisory Council, U.S. Department of Labor (2016-2018)
- Member, Data User Advisory Committee, U.S. Bureau of Labor Statistics (2009-2018, chair 2009-2011)
- Member, National Advisory Committee on Innovation and Entrepreneurship, U.S. Department of Commerce (2016-2018)
- Member, U.S. Bureau of Economic Analysis Advisory Committee (2008-present)
- Member, Statistics Committee, National Association for Business Economics (2013-present)
- Member, Panel on Communicating National Science Foundation Science and Engineering Information to Data Users, Committee on National Statistics, National Research Council (2010-2011)

Publications

- "Nationwide Data Initiative: Principles of Approach to Organizational Design and Development," for the US Partnership on Mobility from Poverty, April 2018
- "Counting U.S. Secondary and Postsecondary Credentials," co-author with Center for Regional Economic Competitiveness, for Credential Engine, April 2018

- "Counting for Dollars 2020: The Role of the Decennial Census in the Geographic Distribution of Federal Funds – Report #2: Estimating Fiscal Costs of a Census Undercount to States," March 2018
- "A Roadmap to a Nationwide Data Infrastructure for Evidence-Based Policymaking," with Julia Lane, *The ANNALS of the American Academy of Political and Social Science*, Vol 675, Issue 1, 2018
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- "Global Entrepreneurship Week Policy Survey," report, Public Forum Institute, November 2013
- "Improving Federal Statistics for Industry Studies," research paper presented at Industry Studies Association annual conference, Kansas City, Missouri, May 2013
- "Using Real-time Labor Market Information on a Nationwide Scale," policy brief, Credentials That Work Initiative, Jobs for the Future, April 2013

- “Labor Market Information Customers and Their Needs: Customer-Oriented LMI Product Innovation,” with Center for Regional Economic Competitiveness, report for the Customer Consultation Study Group, Workforce Information Council, April 2012
- “Economic Intelligence: Enhancing the Federal Statistical System to Support U.S. Competitiveness,” policy brief, Series on U.S. Science, Innovation, and Economic Competitiveness, Center for American Progress, February 2012
- "Say Goodbye to the Survey of Business Owners?," Policy Forum Blog, the Policy Dialogue on Entrepreneurship, September 26, 2011.
- “The Quality of Economic Statistics is About to Erode,” Policy Forum Blog, the Policy Dialogue on Entrepreneurship, September 19, 2011
- "Putting America to Work: The Essential Role of Federal Labor Market Statistics," article, AMSTAT News, American Statistical Association, March 1, 2011
- “The Federal Role in Encouraging Innovation: The "I's" Have It,” article, Innovation Policy Blog, December 18, 2010

Congressional and Other Public Testimony

- “The Evolution of the Federal Statistical System: Implications for Evidence-based Policymaking,” testimony to the Commission on Evidence-based Policymaking, March 13, 2017
- “The American Community Survey: Approaches to Addressing Constituent Concerns,” testimony before the Subcommittee on Federal Financial Management, Committee on Homeland Security and Government Affairs, U.S. Senate, Washington, DC, July 18, 2012
- “The Economic Impact of Ending or Reducing Funding for the American Community Survey and Other Government Statistics,” testimony before the Joint Economic Committee, U.S. Congress, Washington, DC, June 19, 2012
- Testimony on the President’s FY2012 Budget before the House Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies, Washington, DC, March 11, 2011

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Fellow, Metropolitan Policy Program, The Brookings Institution (2006-2010)

Managed the Federal Data Project, an effort that encouraged the federal government to produce the current, accurate, detailed geographic data needed by public and private decision-makers and researchers. Priorities included economic statistics, demographic statistics, and federal expenditures data. Methods include congressional testimony and briefings, public presentations, written and oral communications with federal statistical organizations, public and roundtable events, statistical system stakeholder network development, participation in statistical agency advisory committees, and data product development.

Examples of efforts included:

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- Economic data roundtables with federal statistical agencies, professional and trade associations, policy research organizations, and federal program agencies (2008-2010)
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  - "The Federal Statistical System in the 21st Century: The Role of the Census Bureau," testimony before the Joint Economic Committee (2009)
  - "Tempest Over the Census," Brookings editorial (2009)
  - Prototype database to determine geographic allocation of federal funds (counties, metros, states) on the basis on census statistics (2008-09)
  - Prototype tool to provide maps and tables on "hard-to-count" census tracts throughout the U.S. (2008-09)
  - Communications with OMB and Census Bureau leading to improved decennial census enumeration of households in small multi-unit buildings without traditional city-style addresses (2006-09)
  - Census Bureau-data user roundtables on improving Census Bureau's American Community Survey data products (2007-08)

  - "Preparations for 2010: Is the Census Bureau Ready for the Job Ahead?," testimony before the Senate Committee on Homeland Security and Governmental Affairs Subcommittee on Federal Financial Management, Government Information, Federal Services, and International Security (2007)
  - "The 2010 Census: What State, Local, and Tribal Governments Need to Know," workshop (2007)

- Federal Spending Transparency and Accountability
  - "Metro Potential in ARRA: An Early Assessment of the American Recovery and Reinvestment Act" (with Mark Muro, Jennifer Bradley, Alan Berube, Robert Puentes, and Sarah Rahman), chapter on transparency (2009)
  - Memos to and meetings with Congress and the Office of Management and Budget (OMB) on the design and implementation of the Federal Financial Accountability and Transparency Act of 2006 and American Recovery and Reinvestment Act (2007-09)
  - "OMB's Congressional Mandates to Provide Information on Federal Spending," presentations to the National Grants Partnership (2007) and National Academies of Science (2008)

Prepared briefs, articles, presentations, and testimony on federal economic development policy.

- "Stimulating Regional Economies: the Federal Role," presented at Growing Innovation Clusters for American Prosperity symposium, National Academy of Sciences (2009)
- Congress Directs EDA to Act on Clusters," *The New Republic* blog post (with Mark Muro, 2009)
- "Clusters and Competitiveness: A New Federal Role for Stimulating Regional Economies" (with Karen Mills and Elisabeth Reynolds, 2008)
- "The Department of Commerce Budget Request for Fiscal Year 2008: Observations for Consideration," testimony before the House Committee on Appropriations, Subcommittee on Commerce, Justice, Science and Related Agencies (2007)
- "The Federal Role in Regional Economic Development," testimony before the House Committee on Transportation and Infrastructure, Subcommittee on Economic Development, Public Buildings, and Emergency Management (2007)
- "How Economic Change Happens and Why We Resist It," speech before the Symposium on Change, University of Buffalo Regional Institute (2007)

Deputy Director and Fellow, Urban Markets Initiative, The Brookings Institution (2004-06)

Guided a foundation-funded effort to increase the availability and accessibility of data on urban neighborhoods. Projects managed included:

- Federal data agenda – identifying ways in which the federal government can improve availability and accessibility of statistics for states, metro areas, cities, and neighborhoods
- National Infrastructure for Community Statistics – managing a Community of Practice (CoP) focused on the development of a nationwide infrastructure to provide widespread access to data from multiple sources on multiple topics
- Urban budgets – creating a tool to ascertain the flow of federal investments by type of investment and by county

Examples of efforts included:

- "To Take a Bite Out of Crime: Safeguard the Census," *Brookings Alert* (2006)
- "Anticipating the Unimaginable: The Crucial Role of the Census in Disaster Planning and Recovery," *Brookings Alert* (2006)
- "Apportionment in the Balance: A Look into the Progress of the 2010 Decennial Census ," testimony before House Committee on Government Reform (2006)
- "Better Data for Better Decisions: The Value of the American Community Survey to the Nation," Brookings Briefings on the Census (2006)
- "The Road to 2010: Plans for the 2010 Census and the American Community Survey," Brookings Briefings on the Census (2006)
- "Federal Statistics: Robust Information Tools for the Urban Investor" (with Pari Sabety, 2005)

Principal, Andrew Reamer & Associates (full-time 1995-2004, part-time 2004-present)

Promotes sound public policy and effective economic development through three sets of activities:

- Building Capacities for Producing and Using Regional Socioeconomic Data
- Indicator Systems Design and Implementation
- Regional Economic Development Analysis, Strategy, and Program Development

Building Capacities for Producing and Using Regional Socioeconomic Data

- Determining Public and Private Sector Needs For Socioeconomic Data
    - Federal Data Agenda, Urban Markets Initiative, Brookings Institution (consultant, 2004). Managed staff assessments of 30 federal statistical agencies to determine issues and barriers to providing data useful for urban market decisions, and priorities for action to address these issues and barriers.
    - Socioeconomic Data for Economic Development: An Assessment (with Joseph Cortright, for U.S. Economic Development Administration, 1999)
- Mechanisms to Enhance Economic Markets Through Improved Data Development, Access, and Use

- Guides
  - Socioeconomic Data for Understanding Your Regional Economy: A User's Guide (with Joseph Cortright, for U.S. Economic Development Administration, 1998)
- Web sites
  - WorkforceUSA (adviser to Workforce Learning Strategies, for U.S. Department of Labor and Ford Foundation, 2002)
  - Mapstats (adviser to Mapstats Working Group, FedStats Task Force, 2000-01)
  - EconData.Net (co-developer and –owner, with Joseph Cortright, 1999-present). Econdata.Net is a portal to 1,000 on-line sources of regional socioeconomic data, organized by topic and provider. The site has 14,000 visitors monthly, and 3,000 subscribers to a monthly newsletter, StatScan. EconData.Net was developed and operated using Economic Development Administration funds, and is now sponsored by the Fannie Mae Foundation.
- CDs
  - R-Maps, Office of Policy Development and Research, U.S. Department of Housing and Urban Development (facilitator of development of CD with PD&R data sets and LandView mapping tool, 2000-01)
- Conference Design and Development
  - America's Scorecard: The Historic Role of the Census Bureau in an Ever-Changing Nation, Woodrow Wilson International Center for Scholars, Washington, DC (for Census Bureau, March 2004)
  - International Conference on Community Indicators, Community Indicators Consortium, Reno, Nevada (March 2004)
  - Next Generation of Community Statistical Systems, Tampa, Florida (with University of Florida, for Ford Foundation, March 2002)
  - Innovations in Federal Statistics, Woodrow Wilson International Center for Scholars, Washington, DC (for the Center, May 2001)
- Organizational and Professional Network Development and Management
  - Community Indicators Consortium (conference track chair, planning committee chair, 2004)
  - Community Statistical Systems Network (2002 – 04)

Indicator Systems Design and Implementation

- Working Poor Families Project, Annie E. Casey Foundation/Ford Foundation/Rockefeller Foundation (with Brandon Roberts + Associates, 2001 – present)

- Annually oversee the preparation of state indicators on the economic conditions and characteristics of working families and individuals
- With Brandon Roberts, advised state advocacy organizations (15 to date) in the preparation of policy reports on low-income working families
- Co-authored one national report (2004) and advised on second (2008)

- "Development Report Card for the States," Corporation for Enterprise Development (1987 – 2006)
  - Annually prepared indicators on economic vitality for the 50 states
  - Advised on revisions of indicators framework

Regional Economic Development Analysis, Strategy, and Program Development

- Nationwide Analysis Of Regional Economic Dynamics and Programs
  - Technology Transfer and Commercialization: Their Role in Economic Development (for Economic Development Administration, 2003) – Note Chapter Three and Appendix B on the geography of innovation in the U.S.
- Guides
  - Strategic Planning in the Technology-Driven World: A Guidebook for Innovation-Led Development, Collaborative Economics (co-author with Jennifer Montana, for Economic Development Administration, 2001)
- Regional Economic Analysis, Strategy, and Program Development (see next section)

Other Prior Professional Experience – Regional Economic Development

As co-founder and principal of Mt. Auburn Associates (1984-1995) and as principal of Andrew Reamer & Associates (1995-present), Andrew Reamer managed and participated in regional economic development studies of three types: analysis and strategy, program evaluation, and program design

Analysis and Strategy

- General Regional Economic Development Analyses and Strategies

  Involved in over 30 general economic development studies, clients include:
  - States of Massachusetts, Rhode Island, Arkansas, Indiana, Georgia, and Colorado
  - Regions in western Massachusetts, northeast and northwest Connecticut, northern New Mexico, northwest Oregon
  - Metro areas of Boston, Worcester, and Springfield, Massachusetts; Nashua, New Hampshire; Indianapolis, Indiana; Memphis, Tennessee; Shreveport, Louisiana; Austin, Texas
  - Cities of Boston, Massachusetts, Dublin, Ohio, and Collierville, Tennessee

- Clarke County, Georgia and Aiken County, South Carolina

- Regional Industry Competitive Analyses and Strategies
  - Examined competitive strengths, weaknesses, and strategy options for specific regional industries, include fiber optics, telecommunications, information technology, advanced materials, software, metalworking, environmental technology, marine technology, biomedical, food processing, footwear, plastics, oil, natural gas, petrochemicals, wood products, warehousing and distribution, and heavy vehicles.
- Advanced Technology Analyses and Strategies
  - Analyzed key technology industries and development opportunities in Iowa and Virginia
- Prepared regional strategies for promoting technology transfer from the Los Alamos National Laboratory, the Department of Energy Jefferson National Accelerator Facility, and the Air Force's Rome Laboratory.Regional Defense Adjustment Efforts
  - Managed or participated in the preparation of conversion strategies for defense-dependent regions, facilities reuse plans, and base closure impact analyses.
- Recyclable Material Markets Analyses and Strategies
  - Managed or participated in preparation of analyses and strategies in New York, Pennsylvania, Massachusetts, Connecticut, Rhode Island, Texas, North Carolina, Mississippi, and Iowa.

Program Evaluation

- Evaluation Of Federal Economic Development Programs
  - Managed or participated in evaluation of the U.S. Economic Development Administration's Revolving Loan Fund, Technical Assistance, Public Works, and Small Business Incubator programs.
  - Managed two evaluations of the Jobs Through Recycling program of the U.S. Environmental Protection Agency.
- Evaluation of State Economic Development Programs
  - Managed or participated in evaluation of Ohio's Edison Technology Centers and technology transfer intermediaries, New York's Office of Recycling Market Development, Iowa's small business incubator program, Oregon's Regional Strategy program, Georgia's economic development agencies, and Massachusetts' Community Development Finance Corporation.

Program Design

- Design Of State And Individual Small Business Incubator Programs

  - Managed program-specific efforts for the states of Massachusetts and Iowa and facility-specific efforts in New Mexico and Massachusetts.

- Design Of State Defense Industry Conversion Programs
  - For the National Governors Association, participated in the development of state defense industry conversion programs in Massachusetts, Rhode Island, and Virginia.

Chronology of Professional Experience

- Research Professor, George Washington Institute of Public Policy, George Washington University (2011-present)
- Nonresident Senior Fellow, Metropolitan Policy Program, The Brookings Institution (2010-2013)
- Fellow, Metropolitan Policy Program, The Brookings Institution (2005-2010)
- Deputy Director and Fellow, Urban Markets Initiative, Metropolitan Policy Program, The Brookings Institution (2004-06)
- Principal, Andrew Reamer & Associates (full-time 1995-2004, part-time 2004-present)
- Lecturer, Department of Urban Studies and Planning, Massachusetts Institute of Technology (1986, 2002-04)
- Principal, Mt. Auburn Associates (1984-1995)
- Case Team Member, Rhode Island Strategic Development Commission (1983-84)
- Consultant, Counsel for Community Development (1982-83)
- Graduate instructor, MIT Department of Urban Studies and Planning (1981-82)
- Policy Analyst, U.S. Department of Commerce, Office of the Assistant Secretary for Policy (1980)
- Research Assistant, MIT Center for Transportation Studies (1981-82)
- Research Assistant, MIT Energy Laboratory (1978-1981)
- Health Planner, Maryland Health Planning and Development Agency (1975-78)
- Administrative Assistant, Johns Hopkins Hospital (1974)
- Research Analyst, Boston Urban Observatory, University of Massachusetts (1973)
- Summer Intern, Mayor's Office of Public Service, City of Boston (1970, 1971)

Achievements and Honors

- Doctoral Fellow, Harvard-MIT Joint Center for Urban Studies (1983-1984)

Professional Affiliations

- Association of Public Data Users, Past President (2011-2012), President (2009-2010), Vice President (2008), Board member (2006-2007)
- Council for Community and Economic Research, Board member (2007- 2012)

- National Association for Business Economics, Member of Statistics Committee (2013-present)
- International Economic Development Council
- American Economic Association
- History of Economics Association
- Association for Public Policy Analysis and Management
- American Statistical Association
- Association for Talent Development

EXHIBIT B

EXHIBIT
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ANDREW D. REAMER, Ph.D.

George Washington Institute of Public Policy
George Washington University
805 21st St., NW Suite 613
Washington, DC 20036

areamer@gwu.edu
(202) 994-7688

Education

- Ph.D. in Economic Development and Public Policy, Department of Urban Studies and Planning, Massachusetts Institute of Technology (1987)
- Master in City Planning, Department of Urban Studies and Planning, Massachusetts Institute of Technology (1981)
- Bachelor of Science in Economics, cum laude, Wharton School, University of Pennsylvania (1971)

Professional Experience

Research Professor, George Washington Institute of Public Policy, George Washington University (2011-present)

Focus on policies that encourage and support U.S. economic competitiveness. Areas of interest include innovation, regional economic and workforce development, and economic statistics.

Advisory Committees

- Member, Workforce Information Advisory Council, U.S. Department of Labor (2016-2018)
- Member, Data User Advisory Committee, U.S. Bureau of Labor Statistics (2009-2018, chair 2009-2011)
- Member, National Advisory Committee on Innovation and Entrepreneurship, U.S. Department of Commerce (2016-2018)
- Member, U.S. Bureau of Economic Analysis Advisory Committee (2008-present)
- Member, Statistics Committee, National Association for Business Economics (2013-present)
- Member, Panel on Communicating National Science Foundation Science and Engineering Information to Data Users, Committee on National Statistics, National Research Council (2010-2011)

Publications

- "Nationwide Data Initiative: Principles of Approach to Organizational Design and Development," for the US Partnership on Mobility from Poverty, April 2018
- "Counting U.S. Secondary and Postsecondary Credentials," co-author with Center for Regional Economic Competitiveness, for Credential Engine, April 2018

- "Counting for Dollars 2020: The Role of the Decennial Census in the Geographic Distribution of Federal Funds – Report #2: Estimating Fiscal Costs of a Census Undercount to States," March 2018
- "A Roadmap to a Nationwide Data Infrastructure for Evidence-Based Policymaking," with Julia Lane, *The ANNALS of the American Academy of Political and Social Science*, Vol 675, Issue 1, 2018
- "Before the U.S. Tariff Commission: Congressional Efforts to Obtain Statistics and Analysis for Tariff-setting, 1789–1916," chapter for *Centennial History of the United States International Trade Commission*, November 2017
- "Toward A U.S. Competitiveness Strategy," *Innovations: Technology, Governance, Globalization*, Policy Design issue, Summer-Fall 2017, Volume 11, Issue 3-4
- "Counting For Dollars: The Role of the Decennial Census in the Geographic Distribution of Federal Funds Initial Analysis: 16 Largest Census-guided Programs," August 2017.
- "Federal Efforts in Support of Entrepreneurship: A Reference Guide," prepared for the Kauffman Foundation, April 2017
- "Better Jobs Information Benefits Everyone," *Issues in Science and Technology*, v. 23, n. 1, Fall 2016, pp. 58-63.
- "Data Resources to Support Middle-Skill Workforce Development," research paper prepared for Committee on the Supply Chain for Middle-Skill Jobs: Education, Training and Certification Pathways, Board on Science, Technology and Economic Policy, National Academy of Sciences, August 2015
- "Analyzing Talent Flow: Identifying Opportunities for Improvement," with Robert Sheets and David Stevens, for the Talent Pipeline Management Initiative of the Center for Education and Workforce, U.S. Chamber of Commerce Foundation, July 2015
- "Stumbling into the Great Recession: How and Why GDP Estimates Kept Economists and Policymakers in the Dark," GWIPP research note, April 2014
- "Indicators of the Capacity for Invention in the United States," research paper prepared for the Lemelson Foundation, March 2014
- "The Impacts of Technological Invention on Economic Growth – A Review of the Literature," research paper prepared for the Lemelson Foundation, February 2014
- "National Nonprofit Organizations That Inspire and Enable Invention and Invention-based Enterprises," research paper prepared for the Lemelson Foundation, February 2014
- "Global Entrepreneurship Week Policy Survey," report, Public Forum Institute, November 2013
- "Improving Federal Statistics for Industry Studies," research paper presented at Industry Studies Association annual conference, Kansas City, Missouri, May 2013
- "Using Real-time Labor Market Information on a Nationwide Scale," policy brief, Credentials That Work Initiative, Jobs for the Future, April 2013

- “Labor Market Information Customers and Their Needs: Customer-Oriented LMI Product Innovation,” with Center for Regional Economic Competitiveness, report for the Customer Consultation Study Group, Workforce Information Council, April 2012
- “Economic Intelligence: Enhancing the Federal Statistical System to Support U.S. Competitiveness,” policy brief, Series on U.S. Science, Innovation, and Economic Competitiveness, Center for American Progress, February 2012
- "Say Goodbye to the Survey of Business Owners?," Policy Forum Blog, the Policy Dialogue on Entrepreneurship, September 26, 2011.
- “The Quality of Economic Statistics is About to Erode,” Policy Forum Blog, the Policy Dialogue on Entrepreneurship, September 19, 2011
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- "The Structure of the U.S. Economic Statistical System: Implications for Public Policy," presentation to the International Statistical Institute conference, Durban, South Africa (2009)
- "In Dire Straits: The Urgent Need to Improve Economic Statistics," *AmStat News* (2009)
- "Ensuring Economic Programs Accurately Reflect the 21st Century," speech to the Census Bureau Economic Programs Directorate leadership off-site (2008)
- "The Department of Commerce Budget Request for Fiscal Year 2008: Observations for Consideration," testimony before the House Committee on Appropriations, Subcommittee on Commerce, Justice, Science and Related Agencies (2007)

- Demographic Statistics
  - "Surveying for Dollars: The Role of the American Community Survey in the Geographic Distribution of Federal Funds" (2010)
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  - Prototype database to determine geographic allocation of federal funds (counties, metros, states) on the basis on census statistics (2008-09)
  - Prototype tool to provide maps and tables on "hard-to-count" census tracts throughout the U.S. (2008-09)
  - Communications with OMB and Census Bureau leading to improved decennial census enumeration of households in small multi-unit buildings without traditional city-style addresses (2006-09)
  - Census Bureau-data user roundtables on improving Census Bureau's American Community Survey data products (2007-08)

  - "Preparations for 2010: Is the Census Bureau Ready for the Job Ahead?," testimony before the Senate Committee on Homeland Security and Governmental Affairs Subcommittee on Federal Financial Management, Government Information, Federal Services, and International Security (2007)
  - "The 2010 Census: What State, Local, and Tribal Governments Need to Know," workshop (2007)

- Federal Spending Transparency and Accountability
  - "Metro Potential in ARRA: An Early Assessment of the American Recovery and Reinvestment Act" (with Mark Muro, Jennifer Bradley, Alan Berube, Robert Puentes, and Sarah Rahman), chapter on transparency (2009)
  - Memos to and meetings with Congress and the Office of Management and Budget (OMB) on the design and implementation of the Federal Financial Accountability and Transparency Act of 2006 and American Recovery and Reinvestment Act (2007-09)
  - "OMB's Congressional Mandates to Provide Information on Federal Spending," presentations to the National Grants Partnership (2007) and National Academies of Science (2008)

Prepared briefs, articles, presentations, and testimony on federal economic development policy.

- "Stimulating Regional Economies: the Federal Role," presented at Growing Innovation Clusters for American Prosperity symposium, National Academy of Sciences (2009)
- Congress Directs EDA to Act on Clusters," *The New Republic* blog post (with Mark Muro, 2009)
- "Clusters and Competitiveness: A New Federal Role for Stimulating Regional Economies" (with Karen Mills and Elisabeth Reynolds, 2008)
- "The Department of Commerce Budget Request for Fiscal Year 2008: Observations for Consideration," testimony before the House Committee on Appropriations, Subcommittee on Commerce, Justice, Science and Related Agencies (2007)
- "The Federal Role in Regional Economic Development," testimony before the House Committee on Transportation and Infrastructure, Subcommittee on Economic Development, Public Buildings, and Emergency Management (2007)
- "How Economic Change Happens and Why We Resist It," speech before the Symposium on Change, University of Buffalo Regional Institute (2007)

Deputy Director and Fellow, Urban Markets Initiative, The Brookings Institution (2004-06)

Guided a foundation-funded effort to increase the availability and accessibility of data on urban neighborhoods. Projects managed included:

- Federal data agenda – identifying ways in which the federal government can improve availability and accessibility of statistics for states, metro areas, cities, and neighborhoods
- National Infrastructure for Community Statistics – managing a Community of Practice (CoP) focused on the development of a nationwide infrastructure to provide widespread access to data from multiple sources on multiple topics
- Urban budgets – creating a tool to ascertain the flow of federal investments by type of investment and by county

Examples of efforts included:

- "To Take a Bite Out of Crime: Safeguard the Census," *Brookings Alert* (2006)
- "Anticipating the Unimaginable: The Crucial Role of the Census in Disaster Planning and Recovery," *Brookings Alert* (2006)
- "Apportionment in the Balance: A Look into the Progress of the 2010 Decennial Census ," testimony before House Committee on Government Reform (2006)
- "Better Data for Better Decisions: The Value of the American Community Survey to the Nation," Brookings Briefings on the Census (2006)
- "The Road to 2010: Plans for the 2010 Census and the American Community Survey," Brookings Briefings on the Census (2006)
- "Federal Statistics: Robust Information Tools for the Urban Investor" (with Pari Sabety, 2005)

Principal, Andrew Reamer & Associates (full-time 1995-2004, part-time 2004-present)

Promotes sound public policy and effective economic development through three sets of activities:

- Building Capacities for Producing and Using Regional Socioeconomic Data
- Indicator Systems Design and Implementation
- Regional Economic Development Analysis, Strategy, and Program Development

Building Capacities for Producing and Using Regional Socioeconomic Data

- Determining Public and Private Sector Needs For Socioeconomic Data
    - Federal Data Agenda, Urban Markets Initiative, Brookings Institution (consultant, 2004). Managed staff assessments of 30 federal statistical agencies to determine issues and barriers to providing data useful for urban market decisions, and priorities for action to address these issues and barriers.
    - Socioeconomic Data for Economic Development: An Assessment (with Joseph Cortright, for U.S. Economic Development Administration, 1999)
- Mechanisms to Enhance Economic Markets Through Improved Data Development, Access, and Use

- Guides
  - Socioeconomic Data for Understanding Your Regional Economy: A User's Guide (with Joseph Cortright, for U.S. Economic Development Administration, 1998)
- Web sites
  - WorkforceUSA (adviser to Workforce Learning Strategies, for U.S. Department of Labor and Ford Foundation, 2002)
  - Mapstats (adviser to Mapstats Working Group, FedStats Task Force, 2000-01)
  - EconData.Net (co-developer and –owner, with Joseph Cortright, 1999-present). Econdata.Net is a portal to 1,000 on-line sources of regional socioeconomic data, organized by topic and provider. The site has 14,000 visitors monthly, and 3,000 subscribers to a monthly newsletter, StatScan. EconData.Net was developed and operated using Economic Development Administration funds, and is now sponsored by the Fannie Mae Foundation.
- CDs
  - R-Maps, Office of Policy Development and Research, U.S. Department of Housing and Urban Development (facilitator of development of CD with PD&R data sets and LandView mapping tool, 2000-01)
- Conference Design and Development
  - America's Scorecard: The Historic Role of the Census Bureau in an Ever-Changing Nation, Woodrow Wilson International Center for Scholars, Washington, DC (for Census Bureau, March 2004)
  - International Conference on Community Indicators, Community Indicators Consortium, Reno, Nevada (March 2004)
  - Next Generation of Community Statistical Systems, Tampa, Florida (with University of Florida, for Ford Foundation, March 2002)
  - Innovations in Federal Statistics, Woodrow Wilson International Center for Scholars, Washington, DC (for the Center, May 2001)
- Organizational and Professional Network Development and Management
  - Community Indicators Consortium (conference track chair, planning committee chair, 2004)
  - Community Statistical Systems Network (2002 – 04)

Indicator Systems Design and Implementation

- Working Poor Families Project, Annie E. Casey Foundation/Ford Foundation/Rockefeller Foundation (with Brandon Roberts + Associates, 2001 – present)

- Annually oversee the preparation of state indicators on the economic conditions and characteristics of working families and individuals
- With Brandon Roberts, advised state advocacy organizations (15 to date) in the preparation of policy reports on low-income working families
- Co-authored one national report (2004) and advised on second (2008)

- "Development Report Card for the States," Corporation for Enterprise Development (1987 – 2006)
  - Annually prepared indicators on economic vitality for the 50 states
  - Advised on revisions of indicators framework

Regional Economic Development Analysis, Strategy, and Program Development

- Nationwide Analysis Of Regional Economic Dynamics and Programs
  - Technology Transfer and Commercialization: Their Role in Economic Development (for Economic Development Administration, 2003) – Note Chapter Three and Appendix B on the geography of innovation in the U.S.
- Guides
  - Strategic Planning in the Technology-Driven World: A Guidebook for Innovation-Led Development, Collaborative Economics (co-author with Jennifer Montana, for Economic Development Administration, 2001)
- Regional Economic Analysis, Strategy, and Program Development (see next section)

Other Prior Professional Experience – Regional Economic Development

As co-founder and principal of Mt. Auburn Associates (1984-1995) and as principal of Andrew Reamer & Associates (1995-present), Andrew Reamer managed and participated in regional economic development studies of three types: analysis and strategy, program evaluation, and program design

Analysis and Strategy

- General Regional Economic Development Analyses and Strategies

  Involved in over 30 general economic development studies, clients include:
  - States of Massachusetts, Rhode Island, Arkansas, Indiana, Georgia, and Colorado
  - Regions in western Massachusetts, northeast and northwest Connecticut, northern New Mexico, northwest Oregon
  - Metro areas of Boston, Worcester, and Springfield, Massachusetts; Nashua, New Hampshire; Indianapolis, Indiana; Memphis, Tennessee; Shreveport, Louisiana; Austin, Texas
  - Cities of Boston, Massachusetts, Dublin, Ohio, and Collierville, Tennessee

- Clarke County, Georgia and Aiken County, South Carolina

- Regional Industry Competitive Analyses and Strategies
  - Examined competitive strengths, weaknesses, and strategy options for specific regional industries, include fiber optics, telecommunications, information technology, advanced materials, software, metalworking, environmental technology, marine technology, biomedical, food processing, footwear, plastics, oil, natural gas, petrochemicals, wood products, warehousing and distribution, and heavy vehicles.
- Advanced Technology Analyses and Strategies
  - Analyzed key technology industries and development opportunities in Iowa and Virginia
- Prepared regional strategies for promoting technology transfer from the Los Alamos National Laboratory, the Department of Energy Jefferson National Accelerator Facility, and the Air Force's Rome Laboratory.Regional Defense Adjustment Efforts
  - Managed or participated in the preparation of conversion strategies for defense-dependent regions, facilities reuse plans, and base closure impact analyses.
- Recyclable Material Markets Analyses and Strategies
  - Managed or participated in preparation of analyses and strategies in New York, Pennsylvania, Massachusetts, Connecticut, Rhode Island, Texas, North Carolina, Mississippi, and Iowa.

Program Evaluation

- Evaluation Of Federal Economic Development Programs
  - Managed or participated in evaluation of the U.S. Economic Development Administration's Revolving Loan Fund, Technical Assistance, Public Works, and Small Business Incubator programs.
  - Managed two evaluations of the Jobs Through Recycling program of the U.S. Environmental Protection Agency.
- Evaluation of State Economic Development Programs
  - Managed or participated in evaluation of Ohio's Edison Technology Centers and technology transfer intermediaries, New York's Office of Recycling Market Development, Iowa's small business incubator program, Oregon's Regional Strategy program, Georgia's economic development agencies, and Massachusetts' Community Development Finance Corporation.

Program Design

- Design Of State And Individual Small Business Incubator Programs

  - Managed program-specific efforts for the states of Massachusetts and Iowa and facility-specific efforts in New Mexico and Massachusetts.

- Design Of State Defense Industry Conversion Programs
  - For the National Governors Association, participated in the development of state defense industry conversion programs in Massachusetts, Rhode Island, and Virginia.

Chronology of Professional Experience

- Research Professor, George Washington Institute of Public Policy, George Washington University (2011-present)
- Nonresident Senior Fellow, Metropolitan Policy Program, The Brookings Institution (2010-2013)
- Fellow, Metropolitan Policy Program, The Brookings Institution (2005-2010)
- Deputy Director and Fellow, Urban Markets Initiative, Metropolitan Policy Program, The Brookings Institution (2004-06)
- Principal, Andrew Reamer & Associates (full-time 1995-2004, part-time 2004-present)
- Lecturer, Department of Urban Studies and Planning, Massachusetts Institute of Technology (1986, 2002-04)
- Principal, Mt. Auburn Associates (1984-1995)
- Case Team Member, Rhode Island Strategic Development Commission (1983-84)
- Consultant, Counsel for Community Development (1982-83)
- Graduate instructor, MIT Department of Urban Studies and Planning (1981-82)
- Policy Analyst, U.S. Department of Commerce, Office of the Assistant Secretary for Policy (1980)
- Research Assistant, MIT Center for Transportation Studies (1981-82)
- Research Assistant, MIT Energy Laboratory (1978-1981)
- Health Planner, Maryland Health Planning and Development Agency (1975-78)
- Administrative Assistant, Johns Hopkins Hospital (1974)
- Research Analyst, Boston Urban Observatory, University of Massachusetts (1973)
- Summer Intern, Mayor's Office of Public Service, City of Boston (1970, 1971)

Achievements and Honors

- Doctoral Fellow, Harvard-MIT Joint Center for Urban Studies (1983-1984)

Professional Affiliations

- Association of Public Data Users, Past President (2011-2012), President (2009-2010), Vice President (2008), Board member (2006-2007)
- Council for Community and Economic Research, Board member (2007- 2012)

- National Association for Business Economics, Member of Statistics Committee (2013-present)
- International Economic Development Council
- American Economic Association
- History of Economics Association
- Association for Public Policy Analysis and Management
- American Statistical Association
- Association for Talent Development

EXHIBIT C

Exhibit C

SOURCES FOR TRIAL DECLARATION OF DR. ANDREW REAMER
State of California, et al. v. Wilbur L. Ross, et al., No. 3:18-cv-01865

The following is a list of sources relied on by Dr. Andrew Reamer when forming his expert opinions, as articulated in his Trial Declaration:

Publications

- Danielle Neiman, Susan King, David Swanson, Stephen Ash, Jacob Enriquez, and Joshua Rosenbaum, "Review of the 2010 Sample Redesign of the Consumer Expenditure Survey," presented at the Joint Statistical Meetings, October 2015.

- Congressional Research Service, "Community Development Block Grants and Related Programs: A Primer," R43520, April 30, 2014, available at https://nationalaglawcenter.org/wp-content/uploads/assets/crs/R43520.pdf.

- Congressional Research Service, "Medicaid's Federal Medical Assistance Percentage (FMAP)," R43847, April 28, 2018, available at https://fas.org/sgp/crs/misc/R43847.pdf.

- Congressional Research Service, "A Primer on WIC: The Special Supplemental Nutrition Program for Women, Infants, and Children," Report R44115, April 7,2017, available at https://www.everycrsreport.com/files/20170407R441156016e730b90870b2d72a71fa9e0d8c70285d73ea.pdf.

- Office of Management and Budget, "Analytical Perspectives, Budget of the United States Government, Fiscal Year 2019," Supplemental Materials, February 2018, Table 19.8: Direct Loan Transactions of the Federal Government and Table 19.9: Guaranteed Loan Transactions of the Federal Government, available at https://www.whitehouse.gov/omb/analytical-perspectives/ (PTX-780).

- U.S. Census Bureau, "American Community Survey: Design and Methodology," January 2014, at https://www.census.gov/programs-surveys/acs/methodology/design-and-methodology.html.

- U.S. Census Bureau, "Chapter 3. Frame Development" in "American Community Survey: Design and Methodology," January 2014.

- U.S. Census Bureau, "Section 10.6: Editing and Imputation" in "American Community Survey: Design and Methodology," January 2014.

- U.S. Census Bureau, "Chapter 11. Weighting and Estimation," in "American Community Survey: Design and Methodology," January 2014.

- U.S. Census Bureau, "Chapter 14: Estimation of Variance" in "Current Population Survey: Design and Methodology," Technical Paper 66, October 2006.

- U.S. Census Bureau, "Methodology For The United States Population Estimates: Vintage 2017, Nation, States, Counties, and Puerto Rico – April 1, 2010 to July 1, 2017,"

available at https://www2.census.gov/programssurveys/popest/technical-documentation/methodology/2010-2017/2017-natstcopr-meth.pdf (PTX-782).

- U.S. Census Bureau, "SAIPE Methodology," available at https://www.census.gov/programs-surveys/saipe/technicaldocumentation/methodology.html.
- U.S. Census Bureau, "Urban-Rural Classification," available at https://www.census.gov/geo/reference/urban-rural.html.
- U.S. Department of Agriculture, "2013 State-Level Estimates of Infants and Pre-School-Age Children at or Below 185 Percent of Poverty," September 1, 2015, available at https://fns-prod.azureedge.net/sites/default/files/wic/2013%20State-Level-Estimates-of-Infants-and-Pre-School-Age-Children-at-or%20....pdf.
- U.S. Department of Agriculture, "2019 President's Budget: Food and Nutrition Service," February 2018, p. 32-64, available at https://www.obpa.usda.gov/32fns2019notes.pdf.
- U.S. Department of Education, "Improving Basic Programs Operated by Local Educational Agencies (Title I, Part A)," available at https://www2.ed.gov/programs/titleiparta/index.html.
- U.S. Department of Education, "Education for the Disadvantaged: Fiscal Year 2019 Budget Request," pp. A-12, A-15, A-1, available at https://www2.ed.gov/about/overview/budget/budget19/justifications/a-ed.pdf.
- U.S. Department of Education, "Department of Education Budget Tables," available at https://www2.ed.gov/about/overview/budget/tables.html.
- U.S. Department of Education, "Title I Allocation Formulas," presentation at the National Title I Conference, February 2018, Philadelphia, Pennsylvania, available at https://www2.ed.gov/about/offices/list/oese/oss/technicalassistance/titleiallocationformulastitleiconfppt22018.pdf.
- U.S. Department of Food and Nutrition Services, "School Meals: Rates of Reimbursement," available at https://www.fns.usda.gov/school-meals/rates-reimbursement.
- U.S. Department of Food and Nutrition Services, "USDA Food Plans: Cost of Food," available at https://www.cnpp.usda.gov/USDAFoodPlansCostofFood.
- U.S. Department of Food and Nutrition Services, "Women, Infants, and Children (WIC)," available at https://www.fns.usda.gov/wic/women-infants-and-children-wic.
- U.S. Department of Food and Nutrition Services, "WIC Funding and Program Data," available at https://www.fns.usda.gov/wic/wic-funding-and-program-data.
- U.S. Office of the Administration for Children and Families, "Social Services Block Grant Program (SSBG)," available at https://www.acf.hhs.gov/ocs/programs/ssbg.
- U.S. Office of the Administration for Children and Families, "SSBG Fact Sheet," available at https://www.acf.hhs.gov/ocs/resource/ssbg-fact-sheet.

- U.S. Office of the Administration for Children and Families, "Fiscal Year 2015 SSBG State Profile," available at https://www.acf.hhs.gov/sites/default/files/ocs/rpt_ssbg_state_data_fy2015_0.pdf.

- U.S. Office of the Administration for Children and Families, "FY 2019 Justification of Estimates for Appropriations Committees," p. 259, available at https://www.acf.hhs.gov/sites/default/files/olab/acf_master_cj_acf_final_3_19_0.pdf

Other Materials

- California Employment Development Department, "Local Workforce Development Areas in California," available at https://www.labormarketinfo.edd.ca.gov/geography/local-workforce-development-areas.html

- Catalog of Federal Domestic Assistance – CFDA, Investopedia, available at https://www.investopedia.com/terms/c/catalog-of-federal-domestic-assistance-cfda.asp (PTX-777)

- Catalog of Federal Domestic Assistance, available at https://beta.sam.gov (PTX-778)

- Reamer Census-guided funding in rural America draft 08-30-18.pdf [REAMER_000001-REAMER_000016] (PTX-812)

- TEGL_16-17.pdf [REAMER_000017- REAMER_000046] (PTX-813)

- Title I 09-17-18.xlsx [REAMER_000049] (PTX-814)

- WIC 09-17-18.xlsx [REAMER_000050] (PTX-815)

- Fraga_NonResponseScenarios 9-17-18 Reamer analysis.xlsx [REAMER_000051] (PTX-816)

- Fraga_NonResponseScenarios 9-17-18 (1).csv [REAMER_000052] (PTX-817)

- Social Service Block Grants 09-17-18.xlsx [REAMER_000053] (PTX-818)

- U.S. Census Bureau, American FactFinder, available at https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

- Reports from U.S. Census Bureau, American FactFinder (PTX-838)

- U.S. Census Bureau, SAIPE Interactive Data Tool, available at https://www.census.gov/datatools/demo/saipe/saipe.html?s appName=saipe&map yearSelector=2016&map geoSelector=aa_c

- U.S. Department of Housing and Urban Development, HUD Awards and Allocations, available at https://www.hudexchange.info/grantees/allocations-awards/

- Figures from Historical Table 6.1 - Composition of Outlays: 1940–2023 of "Budget of the United States Government, Fiscal Year 2019," February 2018, available at https://www.whitehouse.gov/wpcontent/uploads/2018/02/hist06z1-fy2019.xlsx

EXHIBIT D

Federal Assistance Programs with Allocation Formuals Affected by Differential Census Undercount

		Total FY2016 Expenditure	Recipient	Allocation Formula	Notes	Census-derived Figures Determine Funding in Whole or in Part?	Legal Basis
	FMAP				Lower population estimate leads to greater per capita income and a smaller FMAP		
	Payments to States			Reimbursement =			
1	Medical Assistance Program (93.778)	$361,218,476,000	States	FMAP x state expenditures		Whole	42 USC 1396d(b)
2	State Children's Health Insurance Program (93.767)	$13,761,924,000	States	E-FMAP x state expenditures	E-FMAP = state FMAP + (0.3 * (100–FMAP)). Min is 65, max is 85.	Whole (note allotment below)	42 USC 1397ee(2)
3	Foster Care (93.658)	$4,727,773,596	States	FMAP x state expenditures		Whole	45 CFR 1356.60(a)(2)
4	Adoption Assistance (93.659)	$2,591,755,519	States	FMAP x state expenditures		Whole	45 CFR 1356.60(a)(2)
	Payments by States			Payment =			
5	Medicare Part D Clawback	$9,800,000,000	States	(100 - FMAP) x 0.75 x # dual eligibles with full Medicaid benefits x State per capita Part D contribution rate		Whole	42 CFR 423.910
6	Child Care (93.596)	$2,840,075,000	States	Federal allotment x ((100 -FMAP)/FMAP)		Whole	45 CFR 98.55
	Programs Based on Share of:				Lower population estimate leads to lower share		
	Total Population						
8	Federal Transit Formula Grants (20.507)	$8,871,200,000	Transit agencies, States, and local governments	Share of urbanized population, population density		Part	49 USC 5336
9	Community Development Block Grants/Entitlement Grants (14.218)	$3,060,000,000	Cities and urban counties	Share of population, extent of poverty, extent of overcrowding, growth lag, and age of housing		Whole	42 USC 5306
10	Crime Victim Assistance (16.575)	$2,251,629,971	States	State share of population		Part	42 USC 10603
	Children and Youth						
11	Title I Grants to LEAs (84.010)	$14,364,454,918	States – passthrough to LEAs	Number of children and children in poverty		Whole	20 USC 6333-37
2	State Children's Health Insurance Program (93.767)	$13,761,924,000	States	Allotment based on number of low-income children and number of low-income children w/o health insurance		Part(note reimbursement above)	42 USC 1397dd
12	Special Education Grants (84.027)	$11,779,555,245	States – passthrough to LEAs	Share of children and children in poverty		Whole (with limits)	20 USC 1411
13	Head Start (93.600)	$8,648,933,810	States	Share of children and children in poverty		Part	42 USC 9835
14	Supplemental Nutrition Program for Women, Infants, and Children (10.557)	$6,383,830,000	States – passthrough to local agencies	Share of person eligible to participate at 185% of poverty		Part	7 CFR 246.16
15	Child Care and Development Block Grant (93.575)	$2,612,564,000	States	Share of population under 5, inversely weighted by PCI	Undercount compounded by FMAP-like effect	Part	42 USC 9858m
16	Supporting Effective Instruction State Grants (84.367)	$2,255,837,000	States	Share of children 5-17 and children 5-17 in poverty	Formula changes every year	Part	20 USC 6611
17	WIOA Youth Activities (17.259)	$858,000,000		Share of persons 16-21 in poverty		Part	29 USC 2852

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	Adults						
18	Rehabilitation Services - Vocational Rehabilitation Grants to the States (84.126)	$2,981,765,509	States	Share of population, adjusted for PCI	Undercount compounded by FMAP-like effect	Whole	29 USC 730
19	Unemployment Insurance (17.225) -- Admin costs	$2,717,410,000	States	Share of population		Part	42 USC 502
20	Block Grants for Prevention and Treatment of Substance Abuse (93.959)	$1,759,749,115	States	Number of population 18-24, 25-44, 45-64, 65+		Part	42 U.S.C. 300x-33
21	Social Services Block Grant (93.667)	$1,584,400,000	States	Share of total population		Whole	42 USC 1397b
22	Career and Technical Education - Basic Grants to States (84.048)	$1,099,381,153	States	Shares of population 15-19, 20-24, and 25-65, adjusted for PCI	Undercount compounded by FMAP-like effect	Whole	20 USC 2321
23	WIOA Dislocated Worker Formula Grants (17.278)	$1,021,000,000	States – passthrough to local agencies	Share of disadvantaged persons age 16-21 and adult		Part	ETA TEGL 16-17
	Seniors						
24	Special Programs for the Aging, Title III, Part C, Nutrition Services (93.045)	$1,364,209,620	States	Share of population 60+		Whole	42 USC 3024

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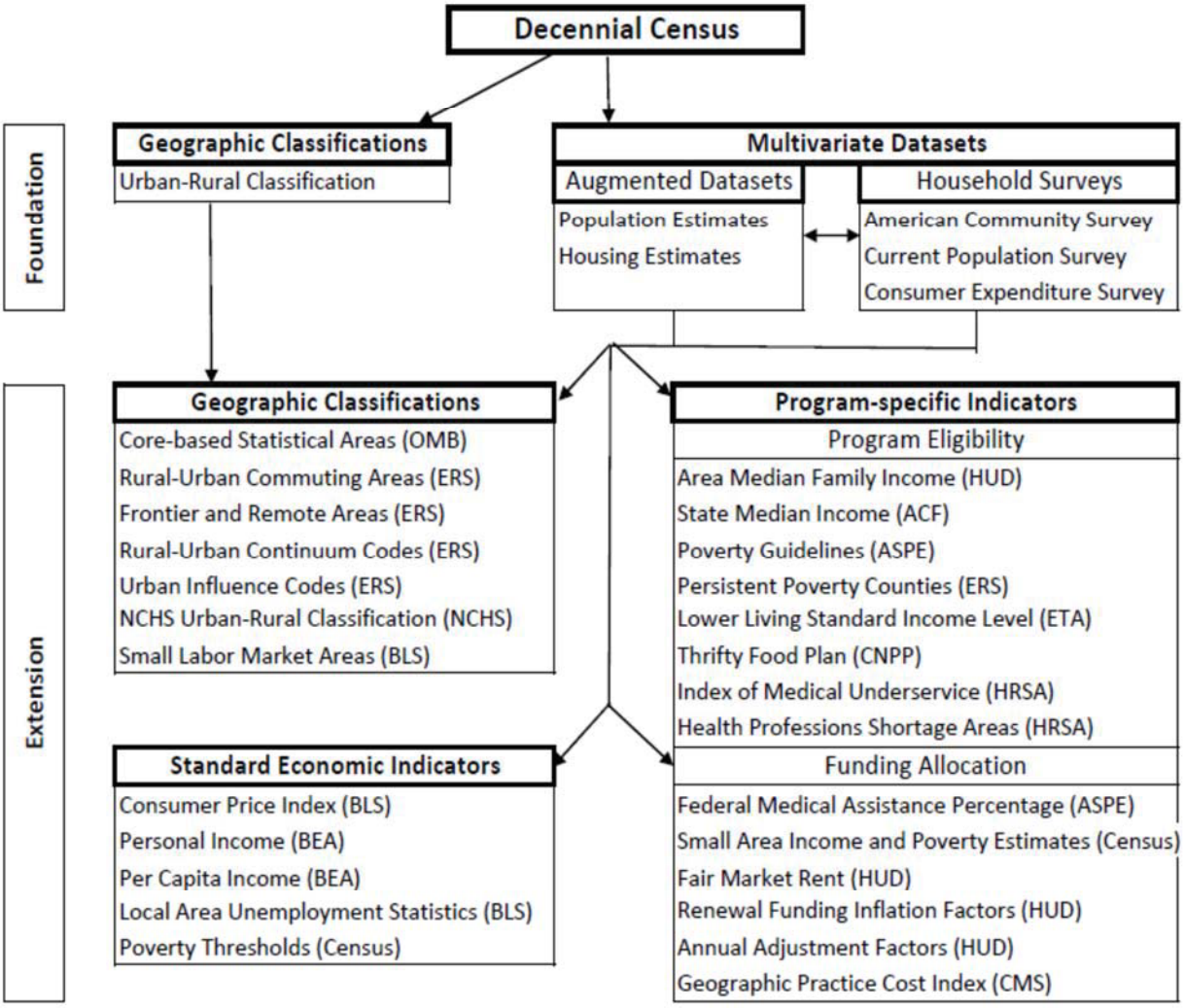
EXHIBIT E

Census-derived Datasets for Distributing Federal Financial Assistance



Agencies Responsible for Census-Derived Datasets

ACF	Administration for Children and Families, Department of Health and Human Services (HHS)
ASPE	Asst. Secretary for Policy and Evaluation, HHS
BEA	Bureau of Economic Analysis, Department of Commerce
BLS	Bureau of Labor Statistics, Department of Labor (DOL)
Census	Census Bureau, Department of Commerce
CMS	Center for Medicare and Medicaid Services, HHS
CNPP	Center for Nutrition Policy and Promotion, Department of Agriculture (USDA)
ERS	Economic Research Service, USDA
ETA	Employment and Training Administration, DOL
HRSA	Health Resources and Services Administration, HHS
HUD	Department of Housing and Urban Development
NCHS	National Center for Health Statistics, HHS
OMB	Office of Management and Budget, White House

EXHIBIT
PTX-246

EXHIBIT F

Population Estimates by Citizenship Status and Non-White Hispanic, Select Cities plus California and U.S., 2017

Rank Order by % Non-Citizens

Geography	Total Population	U.S. Citizens		Not a U.S. citizen		Hispanic or Latino: Non-White	
		#	%	#	%		
United States	325,719,178	303,142,055	93.1%	22,577,123	6.9%	20,623,879	6.3%
California -- State and Select Cities							
California	39,536,653	34,383,924	87.0%	5,152,729	13.0%	6,912,173	17.5%
Santa Ana city, CA	334,135	243,069	72.7%	91,066	27.3%	172,108	51.5%
Anaheim city, CA	352,456	280,137	79.5%	72,319	20.5%	59,775	17.0%
Los Angeles city, CA	3,999,742	3,224,844	80.6%	774,898	19.4%	1,047,414	26.2%
San Jose city, CA	1,035,353	857,473	82.8%	177,880	17.2%	195,588	18.9%
San Francisco city, CA	884,363	768,951	86.9%	115,412	13.1%	87,444	9.9%
San Diego city, CA	1,419,488	1,255,321	88.4%	164,167	11.6%	116,911	8.2%
Sacramento city, CA	501,890	450,650	89.8%	51,240	10.2%	93,049	18.5%
Cities Outside of California							
Miami city, FL	463,354	324,963	70.1%	138,391	29.9%	39,009	8.4%
Houston city, TX	2,313,230	1,849,214	79.9%	464,016	20.1%	232,312	10.0%
Dallas city, TX	1,341,103	1,084,525	80.9%	256,578	19.1%	99,404	7.4%
Newark city, NJ	285,156	233,623	81.9%	51,533	18.1%	55,823	19.6%
New York city, NY	8,622,698	7,220,627	83.7%	1,402,071	16.3%	1,615,009	18.7%
Phoenix city, AZ	1,626,085	1,421,566	87.4%	204,519	12.6%	184,298	11.3%
Chicago city, IL	2,716,462	2,405,004	88.5%	311,458	11.5%	326,678	12.0%
Washington city, DC	693,972	631,003	90.9%	62,969	9.1%	45,406	6.5%
San Antonio city, TX	1,511,913	1,388,732	91.9%	123,181	8.1%	137,777	9.1%
St. Louis city, MO	308,626	294,645	95.5%	13,981	4.5%	3,962	1.3%

Source: American Community Survey, Census Bureau

Prepared by Andrew Reamer, George Washington University

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